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BASIC SKILLS RESOURCE CENTER:

A Pilot Study of Learning Strategies Training With Students of English as a Second Language in the Army

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The pilot study described in this report, a part of the Basic Skills Resource Center research component, was undertaken to investigate the possibility of providing learning strategies instruction in the context of the Army's English as a second language (ESL) program. A formative evaluation of strategies training, which would facilitate the acquisition of speaking and listening skills in the acquisition of English as a second language, suggests that such training can be incorporated into the DLI/ESL curriculum.

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FOREWORD

The Instructional Technical Area of the U.S. Army Research Institute for the Behavioral and Social Sciences directs research in learning strategies applications with a special focus on educational technology and links to military education and training. These research and development efforts are aimed at the overall improvement of the Army's Basic Skills Education Programs.

This report describes a pilot study undertaken to investigate the possibility of incorporating learning strategies training in the context of English as a second language curriculum. A formative evaluation was undertaken of an instructional approach to teach learning strategies to foreign language background enlistees in an effort to facilitate the development of speaking and listening skills in English as a second language. The general approach in the pilot study was to train students on learning strategies that were embedded in lessons from the ESL curriculum developed by the Defense Language Institute (DLI). Student test performance measures as well as teacher and trainee reactions suggest that learning strategies can be trained in the context of the Army's DLI/ESL curriculum.

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A PILOT STUDY OF LEARNING STRATEGIES TRAINING WITH STUDENTS OF ENGLISH AS A SECOND LANGUAGE IN THE ARMY

InterAmerica Research Associates developed and operates the Basic Skills Resource Center (BSRC) under contract with the U.S. Army Research Institute (ARI). The BSRC project has two interfacing components: the design, implementation, and operation of an information service; and the implementation and monitoring of applied research in the area of adult basic skills and continuing education. This report describes one of five research studies undertaken through the BSRC research component.

This pilot study was conducted to investigate the feasibility of incorporating learning strategies instruction in the Army's English as a second language (ESL) program. The general approach in the pilot study was to embed strategy training into selected lessons from the ESL curriculum developed by the Defense Language Institute (DLI) and currently used by the Army. The strategy training was designed for foreign language background enlistees and focused on facilitating the acquisition of listening and speaking skills in English as a second language. The training, which was intended to supplement the DLI/ESL curriculum materials, was presented by project instructors and consisted of instructions to students on the use of strategies during lessons involving the DLI/ESL curriculum content. The subjects were 21 soldiers of varying degrees of English proficiency enrolled in an Army BSEP/ESL program in the spring of 1984. Instruction was presented to these soldiers over a period of five days for a total of thirty hours.

A formative evaluation of the embedded strategy training was conducted, consisting of student test performance measures, oral proficiency ratings, and informal comments from students and regular classroom teachers regarding the instruction. The results of the evaluation indicated that both teachers and students largely accepted the learning strategies approach as it was conducted. The strategies employed during the instruction appeared to suit the tasks and, in most cases, were successfully applied by mid and high proficiency students. However, low proficiency students at first had difficulty in understanding the strategy training and in applying the strategies effectively; their performance on the listening and speaking activities improved following opportunities to practice use of the strategies with these tasks.

In addition, the results of the pilot study indicated that the learning strategies could be trained in the context of the current DLI/ESL curriculum. It was suggested that learning strategy training would need to be compressed in order to fit into the time periods set forth in the DLI/ESL curriculum plan and reduce required teacher preparation time related to the lessons. Finally, refinement of the presentation of strategies, such as providing instruction on one strategy at a time, might also increase the effectiveness of the training with low proficiency students.

Further investigation is recommended to study strategy transfer to different tasks. Additional research is also recommended to study the effects of different combinations of strategy training and their effects on student performance at different levels of proficiency, and to study the effects of training the Army's ESL teachers in the instruction and use of learning strategies.

A PILOT STUDY OF LEARNING STRATEGIES INSTRUCTION WITH STUDENTS OF ENGLISH AS A SECOND LANGUAGE IN THE ARMY

I. INTRODUCTION

The Study of Learning Strategies for Developing Skills in Speaking and Understanding English as a Second Language was designed to identify strategies that students can use to improve language learning and retention. The study was conducted by InterAmerica Research Associates for the Army Research Institute for the Behavioral and Social Sciences under Contract No. MDA-903-82-C-0169 for operation of a Basic Skills Resource Center (BSRC). The BSRC consists of an information database and communications network on Army basic skills education, and a research component on learning strategies in basic skills education. The Study of Learning Strategies for English as a Second Language (ESL) was one of five studies performed by the BSRC within the research component.

This report is the second of two reports for the military component of the ESL study of learning strategies. The report describes a pilot effort to develop and evaluate a learning strategies approach to teaching English as a second language in the military. The study embedded learning strategies training in the Army's English as a second language curriculum and focused on listening and speaking skills. The first report on the military component presented the results of a descriptive study of learning strategies known to Army ESL students and teachers and explored the potential for conducting an experimental study in the Army's English as a second language classrooms. Four prior reports described research conducted in secondary school ESL classrooms: a review of the literature, a

descriptive study, a teacher's guide, and an experimental study reporting results of training learning strategies with vocabulary, listening, and speaking tasks.

The purposes of the pilot study described in this report were (a) to develop an instructional approach designed to teach learning strategies in the context of the Army's English as a second language program; and (b) to conduct a formative evaluation of the learning strategies instructional approach using foreign language background enlistees. The instructional approach emphasized skills in understanding and speaking English and was integrated with selected lessons in the ESL curriculum developed by the Defense Language Institute (DLI). In this modified instructional approach, students were trained to use special strategies to assist their learning and retention of second language materials while retaining the basic content and objectives of the curricular materials.

Background

Many of the language minority soldiers currently enlisted in the Army do not have sufficient skills in English to succeed in military training. The Army estimates that at least 5 percent of the total enlisted force has English language difficulties. In FY 1982 alone, the enrollment in special classes for English as a second language (ESL) was estimated to be between 1,500 and 2,000 soldiers (Oxford-Carpenter, Harman, & Redish, 1983). Hispanic Army enrollments, which constitute approximately 90 percent of the ESL participants, are projected to increase substantially through the year 2000 (Oxford-Carpenter et al., 1983). Evidence in other services indicates that limited English speaking Hispanic recruits have higher attrition

rates, reduced promotion potential, and decreased job efficiency compared to English speaking recruits (Salas, Kincaid, & Ashcroft, 1980).

Almost all of the Hispanic soldiers in ESL classes are from Puerto Rico. They are primarily high school graduates who are literate in Spanish, and some have college experience (Holland, Rosenbaum, Stoddart, Redish, Harman, & Oxford-Carpenter, 1984). Nearly all have studied English as a foreign language in school, some from elementary through secondary school. The Puerto Rican soldiers nevertheless originate from a Spanish-dominant environment and have had little opportunity to use English skills outside of school. Consequently, the ESL enlistees usually have little facility in speaking English or in understanding spoken English although they may have some ability to read or write in English (Oxford-Carpenter et al., 1983). Despite these difficulties, they have considerable potential to contribute to the military as suggested by their educational level, their proficiency in their own language, and their overall motivation (Holland et al., 1984).

The Army provides special ESL courses to increase the potential of limited English proficient enlistees to contribute to the military, to assure that these soldiers have equal opportunities to advance in their military careers, and to control costs associated with attrition and decreased job efficiency. The Army provides six weeks or 180 hours of ESL instruction to enlistees with limited English proficiency prior to Basic Training (BT) and may provide additional ESL in Advanced Individual Training (AIT). ESL provided prior to BT is part of the Basic Skills Education Program (BSEP) and has been studied extensively (Holland et al., 1984; Oxford-Carpenter et al., 1983). Traditionally, the Army has used the English Comprehension Level Test (ECLT) to identify limited English proficient enlistees, and

uses a criterion score on the test of 70 percent. The ECLT is a timed test with 75 listening comprehension items and 45 items assessing vocabulary, grammar, and reading. In FY 1982, there were six installations in the continental United States offering ESL instruction: Forts Benning, Dix, Jackson, Knox, Leonard Wood, and Sill. In the fall of 1983, the Army required all six installations to use a common ESL curriculum designed by the Defense Language Institute (DLI).

The Army has an ongoing concern for enhancing the effectiveness of instruction in all BSEP courses. One of the ways to increase the effectiveness of instruction in general is to teach students to use learning strategies or special techniques to facilitate learning and retention (Weinstein & Underwood, in press). Students can use these strategies in the classroom, during independent study, or in non-academically related attempts to gain command over new skill areas. Although a number of investigations have explored the use of learning strategies with remedial reading courses taught as part of BSEP (e.g., Wittrock & Kelly, 1984), there has been no analysis performed of the potential for learning strategies approaches to be integrated with the DLI/ESL curriculum.

Research On Learning Strategies. Learning strategies are operations or steps used by a learner that will facilitate the acquisition, storage, or retrieval of information (Dansereau, in press; Rigney, 1978). Research and theory in second language learning strongly suggest that good language learners use a variety of strategies to assist them in gaining command over new language skills. Language learning strategies, once identified and successfully taught to less competent learners, could have considerable

potential for enhancing the development of new language skills and for supporting instructional effectiveness. Teachers can play an active and valuable role by training students in the application of learning strategies to new tasks.

Investigations of learning strategies in the second language acquisition literature have focused on describing strategies used by successful second language learners. Research efforts concentrating on the "good language learner" by Rubin (1975) and others (Naiman, Frohlich, Stern, & Todesco, 1978) have identified strategies, through student report or through observation in language learning situations, that appear to contribute to learning. These efforts demonstrate that students do apply learning strategies while learning a second language, and that these strategies can be described and classified. For example, Rubin proposed a classification scheme that subsumes learning strategies under two broad groupings: strategies that directly affect learning (clarification/verification, monitoring, guessing/inductive reasoning, deductive reasoning, and practice), and those which contribute indirectly to learning (creating practice opportunities, and using production tricks such as communication strategies). An alternative scheme proposed by Naiman et al. (1978) contained five broad categories of learning strategies: an active task approach, realization of language as a system, realization of language as means of communication and interaction, management of affective demands, and monitoring of second language performance.

Studies of learning strategy applications in the literature on cognitive psychology extend beyond purely descriptive research and concentrate on determining the effects of strategy training for different kinds of tasks

and learners. Findings from these studies generally indicate that strategy training is effective in improving the performance of students on a wide range of reading and problem solving tasks (e.g., Brown, Bransford, Ferrara, & Campione, 1983; Seigel, Chipman, & Glaser, in press; Dansereau, in press; Wittrock, Marks, & Doctorow, 1975). One of the more important findings from these studies is the distinction drawn between metacognitive and cognitive learning strategies. Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation of learning after the language activity is completed. Cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials (Brown & Palincsar, 1982). This line of research suggests that transfer of strategy training to new tasks can be maximized by pairing cognitive strategies with appropriate metacognitive strategies. Students without metacognitive approaches are essentially learners without direction or opportunity to review their progress, accomplishments, and future learning directions.

Research on training learning strategies in the context of second language learning has been limited almost exclusively to cognitive strategy applications with vocabulary tasks. The typical approach in this research has been either to encourage students to develop their own association linking a vocabulary word with its equivalent in the second language (Cohen & Aphek, 1980, 1981), or to train students to use specific types of linking associations that cue the target word, such as the keyword method (e.g., Atkinson & Raugh, 1975; Levin, in press; Pressley, Levin, Nakamura, Hope, Bispo, & Toye, 1980). Generally, the strategy training is given

individually or is provided by special instructional presentations to a group. Dramatic improvements in individually presented vocabulary learning have been reported consistently in these studies.

In a significant departure from previous research on learning strategies in second language acquisition, O'Malley and his coworkers (O'Malley, Russo, Chamot, Stewner-Manzanares, & Kupper, in press-a; in press-b) conducted a two-phased study of learning strategies applied to skills in English as a second language. In phase one 70 beginning and intermediate level ESL high school students were interviewed in small groups of 3-5 to determine the types of strategies these students used with specific language learning tasks. The tasks included pronunciation, grammar, vocabulary, following directions, making a brief oral presentation, social communication, and operational communication (e.g., applying for a job). Teachers of these students, both in ESL and non-ESL classrooms, were also interviewed. Findings indicated that students used a wide range of learning strategies but tended to use strategies with less complex tasks and strategies that required less cognitive manipulation of information. Strategies that students reported using were classified into 9 metacognitive and 17 cognitive strategies. Teachers were generally unacquainted with learning strategies and with procedures students used to review and study once the instructional material had been presented. The potential appeared to exist for both students and teachers to profit from familiarization with learning strategies.

The second phase of the ESL learning strategies study was an experimental investigation of different levels of metacognitive and cognitive strategy training on three language learning tasks: vocabulary, listening, and speaking skills. Subjects were high school intermediate level ESL students

from Hispanic, Asian, and other ethnic backgrounds. The training methodology employed typical high school ESL materials with a natural teaching approach for one hour daily over eight days in which cues for strategy use were gradually faded over time. Results revealed that learning strategies training was (a) not significant overall for vocabulary, although results for Hispanics were in the predicted direction; (b) significant for listening skills, depending on task difficulty or strength of cues to use learning strategies; and (c) significant for speaking skills in the predicted direction. The implications of this study are that a learning strategies approach can be effective in a natural teaching environment through variations in the teaching methodology rather than through extensive revision of curriculum materials. The study also indicated that learning strategy training can be effective for second language skills such as listening and speaking.

Applications of Learning Strategies Training in Army ESL Classes. The two-phase study described above raises a number of interesting possibilities for learning strategy training to be applied in the DLI/ESL curriculum. If strategy training can be conducted through modifications of teaching procedures rather than through major changes in curriculum materials, a strategies training system could be superimposed over the DLI/ESL curriculum through adjustments in the instructional approach. This would retain the integrity of the curriculum while strengthening the capabilities of the students to learn English and serve a complementary purpose in achieving the curriculum objectives.

A number of exploratory steps are required to determine the feasibility of learning strategies training with the DLI/ESL curriculum. The exploratory

steps can be achieved in a two-part investigation similar to the approach used with high school ESL students. In phase one of the study, which has already been completed, soldiers were interviewed to determine the range and type of strategies they apply to learning English in the event that different strategies emerge due to the uniqueness of the military setting (O'Malley, Kupper, Chamot, Stewner-Manzanares, & Russo, in press-c). Teachers were also interviewed to determine the extent to which learning strategies are already used in presenting the curriculum. The interviews were supplemented with observations to determine the manner in which the curriculum was presented and to analyze potential lessons through which learning strategies could be introduced. During this phase, the full DLI/ESL curriculum was analyzed to gain a clearer impression of the specific procedures that might be used for learning strategies training.

Overall, phase one results in a military setting confirmed findings identified in the completion of related activities undertaken in a public school setting. That is, an extensive range and variety of metacognitive and cognitive learning strategies were reportedly used by students to accomplish a variety of tasks in learning English as a second language. In addition, the findings suggest that soldiers as well as public school students use cognitive strategies which require only modest transformation or manipulation of the materials to be learned, and that strategies are used more frequently for learning vocabulary tasks and for listening comprehension tasks than for oral production tasks. Teacher interview data confirmed earlier findings that most teachers were unaware of how students learned or how strategies might be used by students to improve their learning of English. Finally, the results of the phase one military component indicate that embedding learning strategies training into the

present Army ESL curriculum is both possible and highly promising. These combined results provided a guide for the strategies and procedures that would be most successful when integrated with the DLI/ESL curriculum designed for use during the second exploratory step.

Purposes

The second phase of the study comprised the investigation reported here. The study consisted of a pilot investigation in which teaching procedures for selected lessons from the DLI/ESL curriculum were designed to include training on learning strategies. These procedures were presented to soldiers and given a formative evaluation. Additionally, test items to evaluate the curriculum effectiveness were developed and evaluated with soldiers to whom the training was presented. In brief, the purposes of the study were:

- To develop an instructional approach designed to teach learning strategies in the context of the Army's English as a second language curriculum; and
- To conduct a formative evaluation of the instructional approach using foreign language background enlistees.

II. METHODOLOGY

General Approach

The general approach in the pilot study was to combine learning strategy training with activities that enhance speaking and listening skills. The learning strategy training was integrated with the existing DLI/ESL curriculum and was intended to supplement and not to replace current materials. The strategy training consisted of instructions to students for using learning strategies while rehearsing the curriculum content. The training was presented by project instructors who were observed and assisted by the regular military ESL teachers. The learning strategies used were selected based on analysis of the lesson content and the strategy alternatives that would be expected to maximize learning. Directions for strategy use were faded with successive lessons as soldiers became familiar with the ways in which learning strategies could assist their learning. The experimental curriculum thus included the same materials and objectives found in the DLI/ESL curriculum, differing only by including the learning strategy training.

A formative evaluation of the learning strategies training was performed based on informal comments from students and regular classroom teachers. Staff instructors specifically solicited these comments during and following the instruction. Instructors also observed student attention to and participation in lessons being presented. Students were also administered specially constructed lesson tests to determine whether they mastered the curriculum objectives.

Overview of the Treatment

The treatment was administered by project instructors exclusively in English over a period of five days for a total of thirty hours. A detailed "teacher's script" was followed which contained the exact wording and procedures used to train learning strategies in the curriculum. Following a script provided consistency to the training presented by project instructors and control over the time given to each activity. The treatment consisted of training on specific strategies for listening and speaking tasks followed by practice in the use of the strategies with content from the normal DLI curriculum entitled the United States Army Pre-Basic Training-English Language Course.

The content of each DLI lesson was reformatted into a series of instructions of the "how to" type. For example, the lesson on mouth-to-mouth resuscitation contained sets of instructions on "how to tilt the head back," "how to blow air into the mouth," and finally "how to perform mouth-to-mouth resuscitation." Students were expected to be able both to follow these instructions (listening) and to give the instructions to another soldier (speaking). Thus, speaking and listening activities were integrated throughout the DLI/ESL lessons. In addition to the material in the lesson booklets, three Training Extension Course (TEC) tapes accompanying two of the First Aid lessons and the lesson on the protective mask were used. The TEC tapes remained unchanged in format.

During the treatment, the five text lessons and three TEC tapes were used to cover topics addressing First Aid and the use of the protective mask.

The specific DLI/ESL lessons and TEC tapes are listed in Table 1. Normally six lessons would be covered during this same time period according to the DLI/ESL Course Management Plan. The extra time used during the experiment was needed to incorporate a speaking exercise which was not a part of the usual DLI/ESL curriculum.

The first two days of instruction consisted of strategy training followed by use of the strategies with DLI curriculum content. During subsequent days, only short verbal reviews or cues to use the strategies were given before beginning an activity.

The learning strategies that were chosen for the treatment are shown in Table 2 for each lesson activity and lesson objective. There were two training activities for listening (DLI/ESL Lessons and TEC tapes), and two training activities for speaking (DLI/ESL Lessons and a specially designed speaking exercise). As noted earlier, activities focusing on the DLI/ESL lessons combined listening and speaking in order to develop these skills. For each activity the strategies were selected for the following reasons:

1. To maximize learning and retention of language and content,
2. To be appropriate to the task and the English proficiency of the students, and
3. To be easily controlled by the student if used outside the classroom.

Before the listening or speaking instruction actually began, students were asked to complete a brief evaluation of their strengths and weaknesses as language learners (see Appendix A for the self-evaluation form). The purpose of this activity was to introduce the metacognitive concept of examining oneself as a language learner in a global sense, and to lay the

Table 1

Lesson and Training Extension Course (TEC) Tapes Used in Experimental Curriculum

DLI Lesson or Tape Name	Topics
Lessons	
First Aid (Block II - Module 1 - Lesson 1)	Stopping the bleeding of non-arterial wound
First Aid (Block II - Module 1 - Lesson 2)	Identifying signs of and treating for shock
First Aid (Block II - Module 1 - Lesson 3)	Performing mouth-to-mouth resuscitation
First Aid (Block II - Module 1 - Lesson 4)	Splinting a fracture
Nuclear, Biological, Chemical (NBC) Defense (Block II - Module 2 - Lesson 1)	Putting on and wearing a protective mask
TEC Tapes	
First Aid (Block II - Module 1 - Lesson 3)	The life-saving steps
First Aid (Block II - Module 1 - Lesson 4)	The two kinds of fractures and how to splint them
Nuclear, Biological, Chemical (NBC) Defense (Block II - Module 2 - Lesson 1)	Fitting the mask, attaching the hood to the mask, and inspecting and using the waterproofing bag

Table 2

Learning Strategies Associated with Training Activities
in the Experimental Curriculum

Objective	Activity	Strategies
Listening	DLI/ESL Lessons	Selective Attention Directed Physical Response (DPR) Inferencing Questions for Clarification Cooperation Self-evaluation
	Training Extension Course (TEC) Tape	Selective Attention Inferencing Questions for Clarification Cooperation Self-evaluation
Speaking	DLI/ESL Lessons	Cooperation
	Speaking Exercise	Functional Planning Questions for Clarification

foundation for approaching language learning in a systematic, strategy oriented manner. Unlike later self-evaluations, which focused on learner activities during specific lessons, this self-evaluation was intended as a general beginning to strategy training.

Detailed descriptions of the learning strategies instruction for listening and speaking activities are provided below. Although listening and speaking are discussed separately here, they were tightly integrated during the actual instructional activities.

Listening Instruction. Students were first trained in the use of selective attention. This strategy involves listening for words or expressions that indicate the number and order of steps, and then listening for content words indicating the action to be taken (e.g., first, check for bleeding; second, expose the wound). Second, students were instructed on inferencing, or guessing the meaning of unknown items by using clues found in the surrounding linguistic material. Third, the students were taught questioning for clarification, or how to ask a variety of questions that would clarify the meaning of unknown items. Finally, the students were placed in groups of two and led through Directed Physical Response exercises where the project instructor gave instructions and the students carried out the actions. Students were reminded of the use of selective attention, inferencing, and questions for clarification during this process. After receiving instructions from the instructors once or twice, the soldiers were placed into groups of three where one student acted as the casualty, one gave instructions orally, and one carried out the instructions. Students then switched roles until all had had an opportunity to perform and say the instructions. Placing students in

groups of two and three encouraged cooperation. Cooperation was chosen to promote independent learning with peers in situations where soldiers would otherwise review material on their own. (The script of a sample DPR lesson is presented in Appendix B.) Students were then tested in pairs on comprehension and recall of instructions practiced in class. Testing was accomplished as follows: While the teacher issued a set of directions, for example, on how to splint a fractured limb, one student followed them (listening comprehension), applying a splint to the other student in the pair. Then the first student was required to issue the same set of instructions to the teacher (recall, or speaking), and she applied the splint in accordance with his directions. These two steps constituted a complete DPR testing for one student. Then the second student was tested in the same manner, receiving a different but equivalent set of instructions. While testing was being conducted, students were given a 40 to 50 minute study period, where they read the lesson booklet and completed written exercises.

Following the completion of each lesson text, soldiers viewed related TEC tapes. The TEC tape is a microfilm that is coordinated with an audiotape. All of the learning strategies introduced during the lesson were reviewed before the TEC tape viewing. Students were reminded to use the same strategies that they had used to understand and remember material in the lesson (selective attention, inferencing, questioning for clarification, directed physical response, and cooperation). Self-evaluation was added to this list of strategies and consisted of students examining the accuracy and completeness of information they had drawn from the TEC tape. The teacher wrote the following questions for self-evaluation on the blackboard: Do I understand all the steps? Do I remember all the steps?

Can I explain the steps to someone else? Which parts do I need to review? Students were to ask themselves these questions and, if they found their knowledge to be incomplete, were to seek out a fellow student, (cooperation), to supply the missing information. After the self-evaluation, students were given a few minutes to ask the teacher questions on the content. Following this, the students were assigned to pairs where they were to test each other on important facts and procedures. Students were to initiate their own questions during this period of cooperation. The TEC tape tests were then administered.

As a final step in listening instruction, students were asked to respond in writing to four self-evaluation questions about the lesson they had just completed. The questions were designed to focus each student upon an evaluation of his own activities and participation in the learning process. The questions were as follows:

DAILY SELF-EVALUATION

1. List three things you learned today. What did you do that helped you to learn them?
2. Describe the most difficult part of today's lesson and why you think it was hard to learn.
3. List two things you can do to help yourself learn this difficult material.
4. How do you feel in general about your progress in learning English?

This self-evaluation was completed after each of the five DLI/ESL lessons, and served to reinforce the systematic use of this metacognitive strategy. Thus, the training began with a global self-evaluation, encouraged on-going self-evaluation in the middle of learning activities, and concluded each lesson with a written, lesson-specific self-evaluation.

Speaking Instruction. There were two training activities involving speaking skills. One was part of the DLI/ESL lesson and one was exclusively to teach functional planning. The speaking portion of the DLI/ESL lesson consisted of recalling instructions for a particular procedure and saying those instructions to a peer. Students were encouraged to correct one another during this cooperative process. It was reasoned that those strategies used during the listening portion (DPR, selective attention, inferencing, questioning for clarification, and cooperation) would enhance recall during the speaking portion. By participating in at least one cycle of listening and speaking, students would then find recall easier than if they had merely listened.

The second speaking exercise used functional planning as a strategy to enhance oral production. This activity consisted of three stages: planning, verifying language, and practice. In the first stage, students received a briefing paper (Appendix C) which specified a communication task to be completed and its situational parameters. The tasks were "reporting a physical condition," "getting help from a buddy," and "making a polite request." Students were then asked to analyze the task and to list the communication requirements of such a task. The instructor prompted the first entry on the list to give students an example of the degree of abstraction required. For example, a student might say: "I would start by saying Hey, Joe." The instructor would then write "getting attention" on the board and explain that "Hey, Joe" is an expression used to get someone's attention. After students had examined the task and listed the functions they needed to accomplish in the communication (i.e., getting attention, explaining the problem, saying good-bye), they were to check for

available language to accomplish those functions. The instructor asked the group to provide one or two lines in English that fulfilled each function. If the group was unable to provide lines, the instructor supplied them. The generation of lines, however, did not produce a dialogue of two parts; rather, the students were responsible for creating only the lines they would use in such a situation. The purpose behind generating only the student's set of lines was that this most accurately simulates how they would prepare for a communication task on their own. They can not predict what the other person will say in such a situation; they can only plan and prepare for what they themselves need to accomplish communicatively.

After the class generated a set of lines, a single student practiced an entire conversation with the instructor while the other students listened. The student was expected to use the lines the class had generated only if they were appropriate. The instructor then asked the group to identify the lines employed for certain functions. After three to four conversations with individual students, the instructor then began the conversation with one student and selected another to continue at the point where the first had left off.

This continued until all students had had a chance to practice most or all of a conversation. With each conversation, the instructor varied her lines slightly but introduced similar problems. Students could use either appropriate lines developed earlier or spontaneous lines that fulfilled a function not previously discussed. For unknown or misunderstood material, subjects were coached on how to get clarification. After this practice period, students were allowed to ask questions regarding language or new functions. This was designed to have students practice using the strategy of questions for clarification.

To reinforce functional use of language, two pre-recorded conversations that were functionally equivalent, but different in specific lines, were played (refer to Appendix D for the scripts of two sample conversations). Students were to identify the lines that fulfilled certain functions. These lines could be added to the list of previously generated lines. Students were then allowed to examine the script of one of the conversations for the language involved. They were to identify the functions that particular lines fulfilled and ask questions regarding unknown material. Students were given a few minutes to look over the script and the list of lines. This was followed by simulations with someone other than the instructor. Simulations were recorded and conducted individually in the adjoining offices or at the back of the classroom. For a complete outline of the steps involved in the speaking activity, Appendix E presents the teacher's script for conducting the speaking instruction in its entirety.

In summary the typical daily schedule of instructional activities had the following pattern: (1) introduction to the topic of the lesson; (2) a Directed Physical Response activity, which was a reformatted version of the DLI/ESL text containing from four to six sets of instructions of the "how to" type that students were to understand and then recall verbally; (3) a listening and speaking test of the content found in the Directed Physical Response exercise; (4) reading and review of the text lesson that included fill-in-the blank exercises; (5) the usual DLI lesson test; (6) watching and listening to a TEC tape; (7) cooperation with peers on materials from the TEC tape; (8) a project developed TEC tape test; and (9) completion of a daily self-evaluation. For three of the five days, the following

functional planning activities were added to this list: (1) introduction to a speaking task; (2) elicitation of key lines for the speaking tasks; (3) oral practice of lines with the project instructor; (4) listening to two functionally similar recorded conversations; (5) discussion of important lines found in the conversations; (6) more oral practice of lines with the project instructor; and, finally, (7) simulation of the oral task with someone other than the project instructor.

Subjects and Setting

The subjects were 21 soldiers of varying degrees of English proficiency enrolled in ESL classes in the Basic Skills Education Program offered at one Army installation in the Continental U.S. in the spring of 1984. They had been enrolled in the program from two to five weeks. Table 3 presents their general background characteristics, such as place of birth, most recent residence, educational achievement, and prior experience with English. Out of 21 students, 15 were Puerto Rican, three were Filipino, two were Korean, and one was a Spanish-speaking Colombian. They had studied English from 0 to 12 years either in their country of origin or in the continental United States. Information on the entry and exit ECLT scores achieved by the group is also presented in Table 3. Students were divided into two groups based upon their score on the Army's English Comprehension Level Test (ECLT); each class contained the same number of high, middle, and low ECLT scorers.

The treatment took place in two regular classrooms, each of which contained a small office where individual testing was carried out. Each classroom

Table 3

Selected Background and Language Factors of Soldiers

Variable	Response Category	Ethnicity of Soldiers: Hispanics (n=16) n	%	Non-Hispanics (n=5) n	%	Total (n=21) n	%
Place of Birth	United States	4	25.0	0	-	4	19.1
	Puerto Rico	9	56.3	0	-	9	42.9
	Colombia, S.A.	1	6.3	0	-	1	4.8
	Phillipines	0	-	3	60.0	3	14.3
	Korea	0	-	2	40.0	2	9.5
	Unknown	2	12.5	0	-	2	9.5
Most Recent Residence	United States	3	18.8	5	100.0	8	38.1
	Puerto Rico	13	81.3	0	-	13	61.9
Educational Achievement	Less than high school	1	6.3	0	-	1	4.8
	High school graduate	6	37.5	4	80.0	10	47.6
	More than high school	7	43.8	1	20.0	8	38.1
	Unknown	2	12.5	0	-	2	9.5
Prior Experience with English	Studied English in:						
	Home country	10	62.5	4	80.0	14	66.7
	United States	1	6.3	1	20.0	2	9.5
	Home country & U.S.	3	18.8	0	-	3	14.3
	Did not study English	2	12.5	0	-	2	9.5

Table 3

Selected Background and Language Factors of Soldiers

Variable	Response Category	Ethnicity of Soldiers: Hispanics (n=16) n	%	Non-Hispanics (n=5) n	%	Total (n=21) n	%
Years of English Study	None	2	12.5	0	-	2	9.5
	Less than 1 year	0	-	0	-	0	-
	1-5 years	1	6.3	1	20.0	2	9.5
	6-10 years	3	18.8	1	20.0	4	19.1
	11-15 years	6	37.5	3	60.0	9	42.9
	16 or more years	2	12.5	0	-	2	9.5
	Unknown	2	12.5	0	-	2	9.5
English Language Skills: Entry ECLT	Score Range:						
	0-29	3	18.8	0	-	3	14.3
	30-49	7	43.8	1	20.0	8	38.1
	50-69	5	31.3	4	80.0	9	42.9
	Unknown	1	6.3	0	-	1	4.8
	Mean	42.2		55.6		45.6	
	Standard Deviation	12.4		8.1		12.8	
English Language Skills: Exit ECLT	Score Range:						
	0-29	1	6.3	0	-	1	4.8
	30-49	1	6.3	2	40.0	3	14.3
	50-69	12	75.0	2	40.0	14	66.7
	70 and above	2	12.5	1	20.0	3	14.3
	Mean	60.6		56.0		58.3	
	Standard Deviation	14.1		8.8		12.2	

contained a blackboard, a large flip chart, and a large teacher's desk at the front of the room. Students' desks consisted of small tables placed in parallel rows or in a U-shape.

Instruments

Instruments used included a curriculum specific DPR Listening and Speaking Test, an oral proficiency test, the regular DLI Lesson Tests, the TEC tape tests, and a test of learning strategy uses. The first five instruments were administered during the course of the pilot study while the last instrument was administered only at the conclusion of the training. In addition to the curriculum specific tests, the usual lesson tests which accompanied the DLI/ESL curriculum were administered. The lesson tests, the TEC tape tests, and the test of learning strategies were group administered. Tests of speaking, oral proficiency, and listening comprehension were individually administered.

The DPR Listening and Speaking Test (Appendix F) was designed to represent an actual listening and speaking activity soldiers would have for a task required in Basic Training, e.g., putting on a splint. In the listening portion of the test, students were individually given instructions to perform a set of between 4 and 8 steps related to the lesson content. The student was rated on comprehension on a scale of 0 to 4 (0 = no understanding; 1 = understands less than half the steps; 2 = understands half the steps; 3 = understands more than half; 4 = understands all). In the speaking portion of the test, the examinee was asked to repeat the

instruction verbally in sequence. He was then rated on three factors: comprehensibility, memory of content, and memory of order on a scale from 0 to 4 (0 = no comprehensibility or production; 1 = low comprehensibility and incomplete or incorrect content and order; 2 = low comprehensibility and incorrect order but complete content, or low comprehensibility but correct content and order; 3 = good comprehensibility but incorrect either on content or order or both; 4 = good comprehensibility with correct content and order).

The Oral Proficiency Test (or simulation) was designed to assess speaking proficiency during an actual conversation soldiers might have at the post but for which there are no formal procedures or steps designated in Basic Training. These simulated conversations included the following: reporting on the location and physical condition of a comrade injured in the field, getting clarification on how to perform mouth-to-mouth resuscitation, and making a request for permission to obtain personal leave. As part of classroom activities each student was given a briefing paper informing him of the goal of the communication, the information to be conveyed, and the conditions under which the communication would occur (Appendix C). The class as a whole reviewed the briefing paper and prepared for the communication by using functional planning strategies as described earlier in this report. Each student was then individually tested in the following way: as the examinee, the student initiated the simulated conversation with a second person (a native English speaker) who enacted the role of the person for whom the communication was intended. The second person was either the regular classroom teacher or the program coordinator. The tester was careful to vary his lines so that the simulation was not

identical to any of the conversations practiced in class. The conversations were tape recorded for later scoring. Oral proficiency was rated using the Foreign Service Institute (FSI) Oral Proficiency Scale, which scores proficiency on a 0 to 5 scale (0 = no practical proficiency, 1 = elementary proficiency, 2 = limited working proficiency, 3 = professional proficiency, 4 = distinguished proficiency, 5 = native or bilingual proficiency). For the ease of data analysis and to account for scores that fell between steps (i.e., a score of 1+), the FSI scale was then converted to a scale of 0-10. The key to this conversion and the definitions of language proficiency at each level are provided in Appendix G.

The regular DLI Lesson Tests consisted of five oral questions on a standard tape accompanied by multiple choice answers written on a test sheet and five written items with written multiple choice answers. The oral items tested knowledge of content and specific vocabulary while the written items tested knowledge of vocabulary and verb morphology. A log of lesson test scores was maintained by the regular teacher. From this log, a complete record of each student's performance in the ESL program was collected. This included test scores on the DLI lessons completed before the pilot training was conducted (referred to as "pre-treatment lesson scores" later in this report), test scores obtained during the pilot training (referred to as "during training" scores), and the test scores corresponding to the DLI lessons completed after the pilot training (referred to as "post-treatment" scores). Pre- and post-training scores relate to the DLI curriculum conducted as prescribed in the ESL Course Management Plan (1983), and the instruction corresponding to these lessons did not include strategy training.

The TEC Tape Tests developed for this study assessed listening and reading comprehension based on material found in the Army TEC tapes and in the DLI/ESL lesson texts. There were three TEC tape tests, each administered immediately following presentation of its respective TEC tape (which in turn immediately followed completion of exercises in the lesson booklet). Each test had 10 multiple-choice items in groups of four which assessed recall, comprehension, application, and analysis, as found in Bloom's taxonomy. The examiner read aloud instructions and items to ensure comprehension of the test taking procedures and to avoid delays caused by reading problems. The TEC Tape Tests used in this study were adaptations in the DLI/ESL TEC Tape Tests, which assess recall and comprehension only, and which are not read aloud by the examiner. An example of a TEC Tape Test is presented in Appendix H.

The Learning Strategies Inventory, presented in Appendix I, was a 42-item questionnaire designed to detect uses of 14 learning strategies with specific language learning tasks. Five of the learning strategies were metacognitive and nine were cognitive. The instrument presented statements describing a learning strategy use with one of three specific language learning tasks (vocabulary, listening, speaking), and asked the student to respond by indicating the extent to which the statement was true about him or her (1 = never, 2 = sometimes, 3 = usually, 4 = always). Some of the items were reversed to disrupt response sets. The total score was the sum of the item responses after allowing for item reversals. Soldiers could elect to take the questionnaire either in Spanish or in English. The five Asian subjects were the only soldiers to complete the LSI in English. The instrument was group administered.

Formative Evaluation Procedures

Procedures designed to evaluate the treatment were of two types: formal and informal. Formal procedures included the DPR Listening and Speaking Test, the Oral Proficiency Test, TEC tape tests, the usual lesson tests, and the Learning Strategies Inventory. Informal procedures consisted of observations made by the regular classroom teachers, followed by daily meetings with the project instructors, and a debriefing period with students on the last day of pilot study.

The cooperation teachers (regular ESL classroom teachers) were asked to observe student reactions to the training and the use of learning strategies. Daily meetings ensured that the day's activities would be discussed in detail to obtain the observers' feedback. The instructors asked the observers to comment on the relative success of each activity and to make recommendations regarding changes in the curriculum to ensure success of the same activity the following day.

In addition to meetings with the observers, the two instructors met twice daily to discuss the success of the training, curriculum changes, and individual student progress.

Students were given an informal period at the end of the pilot study to evaluate the treatment. Project instructors walked the subjects through the teaching schedule and obtained reactions to each activity. Students were then asked to indicate their overall reactions to the training.

Informal evaluation procedures also consisted of (a) ongoing observation by the project instructors, and (b) the regular classroom teachers' collection of student reactions during breaks and following the pilot study. Instructors informally noted individual student comments and class participation. Facial gestures and degree of attention were noted as possible indications of success or failure of the treatment.

III. RESULTS

This section of the report will describe the results of formative evaluation procedures used to evaluate the pilot training in learning strategies. Informal student and teacher reactions will be discussed first. These will be followed by an analysis of student test performance throughout the pilot training and within the broader picture of the entire ESL program. Two major classification variables will be used to examine student test performance: language proficiency, determined from the soldier's entry ECLT scores, and ethnicity. The final section discusses the implementation of the learning strategies training.

Student and Teacher Reactions

Student Reactions. Student reactions to the learning strategy training will be discussed in four categories: (a) overall reaction to the training, (b) reaction to specific strategies, (c) difficulties with specific strategies, and (d) recommendations. Each of these is discussed in the following sections.

The overall student reaction to the strategy training and to the application of strategies to listening and speaking activities was positive. Students reported feeling that they benefited from the unique type of training they had received, and felt that the strategies used with listening and speaking were important for their needs. They also indicated that practice on listening and speaking was important for them to function

in a military setting. They especially preferred speaking exercises over all other instructional activities, noting the importance of practicing speaking in an authentic situational context. They commented often on the potential of the strategies to assist them in learning English.

Students reacted particularly favorably to certain strategies such as the directed physical response (DPR), cooperation, functional planning, and asking questions for clarification. With DPR, students felt that by connecting action with language, their comprehension and retention of both language and the military procedures increased. Using realia with DPR was particularly motivating for the students. They enjoyed cooperating in groups of two or three where they could interact in English using semi-structured conversations. Observations of students during DPR cooperation suggested that mixing students of high and low proficiency levels as judged by the project instructors enhanced learning. Students particularly benefited from opportunities to use functional planning to organize communication tasks and to anticipate required language. They reported feeling more confident about carrying out real communication tasks as a result of these experiences. Instructors observed that questioning for clarification was used frequently by students with greater English proficiency, but that students with lower proficiency did not readily use this strategy.

There was some evidence that students used selective attention in addition to these other strategies. Students often repeated expressions mentioned explicitly during training on selective attention. They appeared aware of the importance of isolating the sequential steps involved in an

activity and used markers such as "first" and "second" during the speaking portion of the DPR exercise, as they had been instructed.

The only strategy students reported difficulty in using was self-evaluation. Some students were reluctant to write what they had learned, what was difficult about a lesson, and what they could do to improve their learning. This applied both to the self-evaluation following the TEC tapes' listening activity and the end-of-lesson activity. Language was not a problem in the latter case, for the students had been told that the end-of-lesson self-evaluation could be completed in their native language if they preferred. This was to promote an honest and complete appraisal of their work as well as to reinforce the concept that the evaluation was not a graded exercise, but rather a very personal activity. While several students began their self-evaluations in Spanish, by the end of the training, all students were writing in English. Several students commented that the questions seemed repetitious. Students from Puerto Rico in particular reported finding little value in answering self-evaluation questions. Only one student was enthusiastic about the opportunity to express himself, both about his learning and about his reactions to the curriculum.

Students made a variety of recommendations for improving the instruction. They suggested that even more time could be given to speaking lessons and particularly to opportunities for rehearsal of anticipated lines in dialogue simulation exercises. They suggested that opportunities for this type of practice outside class would be beneficial, but were aware of the severe restrictions placed on their time by military duties and the limited

opportunities for independent study that were available. Students also felt that too much time was spent practicing some of the DPR instructions for the DLI/ESL lessons in their groups of two and three (see Methodology Section: Listening Instruction). Many different sets of DPR instructions had been prepared for practice, both to ensure that appropriate vocabulary was introduced and to guarantee comprehension and involvement of students with lower English proficiency. In the view of some of the students, especially those with higher proficiency, the repetition was excessive.

Regular Classroom Teachers' Comments. Overall, the teachers felt that the strategy training was beneficial in providing students with concrete procedures that enhance learning. The teachers were generally impressed with the facility with which most students were able to understand and produce language after only an hour of exposure and practice. Most of the specific teacher comments centered on details of methodology rather than on the use of strategies during the treatment. For example, they felt that students had difficulty understanding some of the procedures during the treatment. They suggested that more time be spent with slower students to ensure comprehension. Their general feeling was that slower students needed more time and guidance to go through the DLI/ESL text. They felt that, by introducing language in demonstrations, slower students were unable to retain enough to successfully pass the speaking portion of the lesson tests.

The second major concern of the regular classroom teachers was that teacher preparation time for using such methods could be prohibitive. While much time was spent by students working in groups and communicating in English, most of the activities required extensive preparation outside of regular

classroom time. Using groups during the DPR exercises required that materials, such as wood for splints and cloth for bindings, be purchased and prepared ahead of time so that each group had a complete set of materials to work with. At least three or four sets of props for each student group were required. In the case of the protective masks, for example, elaborate arrangements were required to sign masks out and have them transported and returned in the same day. A program that requires handling of the actual or mock objects could therefore be impractical if the administrative constraints of each post are comparable to the one used in the pilot study. Some activities were also teacher-intensive in that much teacher time was required to complete the given task. For example, individual testing required that students be given work that was self-directed while the teacher took students out one at-a-time to be tested. Simulations for the speaking exercise also required staff other than the teachers so that actual simulations were not conducted with the same person with which the student had practiced (this preserves the authenticity of the simulation). This may not always be feasible given the constraints on staff time. A system of rotation may be more feasible where teachers train their own students for the simulation, then send the students to another teacher for its actual conduct.

Overall, the regular classroom teachers felt that students had benefited from the strategy training and from the speaking exercise in particular. While they were concerned that the DLI/ESL lessons had not been given as much time as in the regular course, they felt that the benefits gained from the speaking exercise outweighed the loss of time incurred by the speaking exercise. They felt particularly strongly about this when they observed the most taciturn students anxious to speak. In general, the teachers felt

that the overall pace could have been slowed down for students who had received less than a 35 on the ECLT.

Student Test Performance

The following discussion presents the results of analyses of test data in five areas: (a) the DPR Listening and Speaking Test; (b) the DLI/ESL lesson tests; (c) the TEC tape tests; (d) the Oral Proficiency Test; and (e) the Learning Strategies Inventory. Results are classified throughout these analyses by initial ECLT score and by ethnicity.

In the following sections, analyses by language proficiency are based upon three divisions of ECLT scores: 0-34, 35-49, and 50 and above. The purpose of dividing the distribution of scores below 50 into two separate groups is to examine more closely how students at the lower proficiency levels perform. While the Army considers this pool as the "non-target population" because of their low English proficiency (Defense Language Institute, 1983), these soldiers are nevertheless enrolled in the ESL program with the expectation that they will benefit from the instruction. The division made at an ECLT score of 35 results from the informal impression of the training instructors that students scoring between 35 and 50 had sufficient English proficiency to perform the training activities successfully, while those scoring below 35 had difficulty in understanding the English language-based strategy instruction and implementing use of strategies.

Analyses by ethnicity were conducted to examine possible similarities and differences in how soldiers of different ethnic backgrounds responded to learning strategies instruction. No data analyses by most recent residence

will be presented because the number of Hispanic soldiers who had resided in the United States immediately prior to entering the Army was too small (n=3) to result in meaningful analyses.

DPR Listening and Speaking Tests. Table 4 presents the mean scores obtained by students at the three ECLT proficiency levels on both the listening and speaking components of the DPR test. Table 4 also contains the results of t-tests conducted to analyze improvement between the first and last DPR tests. Both the listening and speaking components of the DPR tests consisted of ratings on a 0-4 scale. Only the lowest proficiency group (0-34) evidenced a near-significant improvement in the listening portion of the test ($p<.10$). Students at the two higher proficiency levels actually performed slightly worse on the final DPR test. There are two possible explanations for this phenomenon. One is that insufficient time was allotted to show improvement in listening skills. Another possibility is that the listening test itself had a ceiling effect and was not difficult enough to evidence significant improvement. For example, the two higher proficiency groups had mean listening scores of 3.7 and 3.8 respectively on a 4.0 scale at the time of the first DPR test, indicating that these students had almost perfect comprehension of the language used in the initial test. This left them little room to show improvement. However, substantial improvement in listening was shown by the 0-34 group. This latter group scored quite low on the first DPR listening test (a mean of 2.3). After they had progressed through the training and had time to familiarize themselves with use of the DPR strategy, they were able to obtain a final score almost equivalent to the higher proficiency groups (3.4, as compared with 3.5 and 3.7).

Table 4

Means and Significance Tests for First and Last
DPR Tests of Listening and Speaking by Initial ECLT Score and Ethnicity

Variable	Measure/ Student Characteristic	Level	n	DPR Test 1		DPR Test 5		Correlated t-test
				Mean	SD	Mean	SD	
Listening	ECLT score[a]	0-34	5	2.3	1.47	3.4	.49	2.20
		35-49	6	3.7	.47	3.5	.50	-.42
		50+	9	3.8	.42	3.7	.47	-.56
Speaking		0-34	5	1.5	.88	3.0	.61	5.50**
		35-49	6	2.9	.66	3.0	.76	.26
		50+	9	2.8	1.2	3.6	.50	2.41*
Listening	Ethnicity	Hispanic	16	3.2	1.1	3.6	.48	1.71
		Non-Hispanic	5	3.8	.4	3.2	.40	-2.44
Speaking		Hispanic	16	2.7	1.1	3.3	.34	2.20*
		Non-Hispanic	5	2.2	1.2	3.3	.48	2.30
Listening		Total	21	3.4	1.0	3.5	.50	.79
Speaking		Total	21	2.6	1.1	3.3	.38	3.08**

*Significant at .05 level.
**Significant at .01 level.
a. The ECLT score of one soldier was not known.

Significant improvement in the speaking component of the DPR test was found for both the high and low proficiency groups, but not for the mid-level (35-49) group. The low proficiency group doubled their score between the first DPR speaking test and the last, an improvement significant at the .01 level. The ECLT-50 and above group gained as well, but their improvement was significant only at the .05 level. Overall, across all soldiers, improvement in DPR speaking was significant at the .01 level.

Examining the students' DPR test performance by ethnicity, it is clear that this activity was most successful for Hispanic soldiers. They showed an improvement in listening significant at the .20 level, while their non-Hispanic counterparts showed a significant decrease in listening between the first and last test. Overall, no significant improvement was found for the group as a whole. The small numbers of cases prevented analyses by ECLT score within ethnic group.

Both ethnicity groups showed an improvement in the DPR speaking component, the Hispanics at the .05 level and the non-Hispanics at the .10 level. As a group, the soldiers' improvement in speaking was significant at the .01 level.

DLI/ESL Lesson Tests. Results from the DLI/ESL lesson tests indicate that during the treatment, students had scores below those received prior to the treatment (see Table 5). Post-training scores were slightly higher than during-treatment scores, but lower than pre-treatment scores. One reason for lowered scores during the treatment is that less time was devoted to written exercises in the DLI text upon which the lesson tests were based.

Table 5

Mean Percent Correct and Standard Deviations for DLI/ESL Lesson Tests
by Initial ECLT Score and Ethnicity

Measure/ Student Characteristic	Level	n	Pre-Training (Block 1)		During Training (Block 2)		Post-Training (Block 2)	
			Mean	SD	Mean	SD	Mean	SD
ECLT Score[a]	0-34	5	74.2	11.9	72.4	15.9	75.7	11.2
	35-49	6	86.3	10.3	78.0	13.3	79.8	9.4
	50+	9	93.3	4.0	86.4	13.1	91.4	5.1
Ethnicity	Hispanic	16	86.9	12.1	83.3	15.0	84.2	11.9
	Non-Hispanic	5	87.0	9.3	73.2	11.6	84.8	5.0
Total		21	86.9	11.5	80.9	14.9	84.3	10.7

a. The entry ECLT Score of one soldier was not known.

Lesson tests were written and concentrated on knowledge of grammar and isolated vocabulary. Therefore, less time devoted to reading the text content could account for lower scores on the lesson tests. Another reason for the lower scores is that the content of lessons introduced during the treatment was more difficult than for prior lessons. Lessons used during the treatment were the first lessons in the DLI series that concentrated on technical military subjects. Prior to treatment, the students had lessons on practical subjects such as "the barracks," and "going on sick call." During the treatment, the subjects were "how to stop bleeding," "treating shock," "mouth-to-mouth resuscitation," "fractures and splints," and "the mask." Lessons after the treatment included subjects such as "individual tactical training" and "weapons training." The subjects treated during and after treatment may have been more difficult in that the subject matter was more technical and therefore novel to the students. Post-treatment scores also indicate that the treatment itself was not the cause for the decline in scores and that the nature of the lessons may have affected scores.

Examining the specific performance of all three proficiency groups, shown in Table 5, it can be seen that the ECLT-50+ group consistently achieved the highest lesson test scores. This is in keeping with the fact that the DLI/ESL materials were targeted specifically for soldiers scoring at this level of English proficiency. While the scores of the two lower proficiency groups were considerably lower than those of the high proficiency group, the soldiers in these two groups were able to maintain a performance level above 70 percent of the test items correct during the training. Further, their test performance during training was fairly

consistent with their performance after training; as mentioned in the preceding paragraph, the content of the materials presented during and after strategy training were more difficult than pretraining content. Given the consistency in test scores between during- and post-training materials, it would seem that the shift in approach to the DLI/ESL material during the training did not seriously undermine the typical performance of the lower proficiency groups.

In considering the results by ethnicity (also shown in Table 5), it seems that the Hispanics and the non-Hispanics performed at virtually equivalent levels on pre-training and post-training lessons, but varied by ten percentage points on during-training lessons, in favor of the Hispanics. The sharp drop in the mean score of non-Hispanic implies that, as a group, they are not as readily adaptable to use of learning strategies as the Hispanics. Instructor observation during the training found that several of the Asian soldiers were heavily text-dependent and were therefore disturbed by the change from learning the concepts and vocabulary of each lesson through reading to learning through listening and speaking. As mentioned above, less time was devoted during the training to working in the lesson booklets; apparently, this shift had a more profound effect upon the performance of Asian soldiers.

TEC Tape Tests. Scores from the TEC tape tests developed by InterAmerica indicated that student performance varied considerably over three tests. Scores from only three tests were recorded because mechanical problems with the TEC tape machinery invalidated the others that were administered. Average percent correct for the group as a whole for the three tests were 68.6 percent, 57.6 percent, and 58.6 percent, as shown in Table 6.

Table 6

Mean Percent Correct on TEC Tape Tests by
Initial ECLT Score and Ethnicity

Measure/ Student Characteristic	Level	n	Mouth to Mouth	Fractures and Splints	the Gas Mask
ECLT Score[a]	0-34	5	62.0	50.0	54.0
	35-49	6	71.7	58.3	55.0
	50+	9	70.0	57.8	62.2
Ethnicity	Hispanic	16	70.0	61.9	62.5
	Non-Hispanic	5	64.0	44.0	46.0
Total		21	68.6	57.6	58.6

a. The entry ECLT score of one soldier was not known.

None of the proficiency groups maintained what would normally be considered an adequate level of performance (70 percent of the items correct). There are several possible explanations for their consistently low performance on the TEC tape tests. One is directly related to an analysis of the task itself: listening to the TEC tape. These tapes were generally shown to the soldiers in the afternoon, in a darkened room, and their attention was observed to wander frequently. Certain components of the strategy training designed to help them comprehend and recall the material presented in the tapes were not successful. These were: questioning for clarification, cooperation, and self-evaluation. The soldiers were expected to evaluate actively the completeness of their understanding and ask questions and seek help from their peers accordingly. They did not do this on a systematic or disciplined basis and required a great deal of instructor direction to engage themselves actively *in the materials* and the use of strategies.

While the particular strategies taught in conjunction with this activity seem appropriate to their needs, refinement of particular strategy use is indicated. Specifically, the use of cooperation and self-evaluation could be formalized to include a written component or organized group work. The responsibility of producing something in writing would force the soldiers to pay strict attention to the tapes, instead of viewing this activity as an opportunity to either nap or daydream. Any modification of the training approach to the TEC tapes should initially include greater instructor direction, until the soldiers are sufficiently versed in the strategies to take lead responsibility themselves.

A further problem with this activity was the testing itself. The TEC tape tests, both in format and specific questions, were too difficult for many of the soldiers. They were not familiar with many of the types of questions presented to them, which included placing steps in sequential order and application of basic knowledge to specific situations, in addition to the more common true-false and multiple-choice items. The soldiers had to struggle to interpret both the new question formats and the language used to express the questions. More time had to be devoted to testing than was anticipated, due to their evident confusion. While the tests themselves could be seen as challenging, and certainly required more on a cognitive level than more recognition of facts, perhaps future training should simplify the format and provide the soldiers with the time and guidance needed to familiarize themselves with this style of testing. As Table 6 indicates, the non-Hispanic soldiers had the lowest test performance and clearly needed more exposure to this more cognitively demanding approach to testing.

The low scores obtained by the non-Hispanic students may indicate that, not only the test, but the task itself, of listening and inferencing from visual clues, was a difficult one for students who were observed to be text dependent. The average score for the Hispanic group, on the other hand, is equal to that of the high proficiency group and may indicate a difference in strategy use to accomplish the task. The overall lack of success on this task by all groups may be a result of the difficulty of the task, difficulty of the test, and resistance to using strategies different from the ones they presently use.

Oral Proficiency Tests. Results of the Speaking Tests reveal that, overall, students improved significantly ($p<.05$) in their ability to speak in certain situations. As seen in Table 7, the soldiers, as a group, showed a significant improvement, going from a mean score of 2.5 on the first simulation to a mean score of 3.0 on the final simulation. This represents a gain of a half step on the FSI scale, which is considerable given the short amount of time devoted to speaking practice (less than 30 percent of the total training time or 10 hours). More importantly, the three speaking tasks were ordered in such a way that the most difficult task, convincing the sergeant to give leave time, was given last while the easiest task, reporting physical condition, was administered first. This indicates that despite the difficulty of the task, students were able to make efficient use of planning, evaluating their own resources, and practicing to improve their speaking. Indeed, informal student reports indicated that students felt this to be the most valuable part of the training.

Examining performance at each proficiency level, none of the three proficiency groups made a significant improvement in speaking, although all three groups showed improvement in the desired direction. This is an important consideration for the soldiers in the context of their military duties, for future assignments will require them to communicate effectively with other soldiers. While the current DLI/ESL program does not focus much attention on preparing the soldiers for what will no doubt be an essential part of success in the Army, it is clear that devoting a small portion of class time to speaking would be of direct benefit to them.

Table 7

Means and Significance Tests for First and Last Speaking Simulations by Initial ECLT Score and Ethnicity

Measure/ Student Characteristic	Level	n	First Simulation		Last Simulation		t
			Mean	SD	Mean	SD	
ECLT Score[a]	0-34	4	1.5	.5	2.0	.71	1.00
	35-49	6	2.2	1.2	3.0	.58	1.75
	50+	7	3.3	1.0	3.6	.73	1.00
Ethnicity	Hispanic	14	2.5	1.4	3.1	1.10	2.59*
	Non-Hispanic	4	3.0	1.2	3.0	.70	0.00
Total		18	2.6	1.3	3.1	1.0	2.31*

a. The entry ECLT score of one soldier was not known, and simulation data were unavailable on three other soldiers.

*Significant at the .05 level.

KEY TO SIMULATION SCORES
(*converted FSI scale*)

0-1: No practical proficiency
2-3: Elementary proficiency
4-5: Limited working proficiency
6-7: Professional proficiency

Although Hispanic soldiers achieved a significant improvement in speaking ($p<.05$), no significant improvement in the simulation scores of the non-Hispanic group was found. In fact, their scores did not change between the first simulation and the last. More research is needed to discover why they did not respond to the functional planning strategy and the speaking practice, and to determine what modifications or additions to the training approach are needed to effect their performance positively.

Learning Strategies Inventory. The 42-item Learning Strategies Inventory (LSI) was administered to all 21 students at the conclusion of training to determine their normal strategy use. Of the fourteen strategies addressed in the LSI, five were part of the strategy training given the soldiers. The metacognitive strategies used in training were functional planning, selective attention, and self-evaluation. Cognitive strategies used in training were cooperation and inferencing. Results of analyses for the metacognitive strategies embedded in the LSI are shown in Table 8, while results for the LSI cognitive strategies are presented in Table 9.

Examining how soldiers of different English proficiency levels reported using strategies, several factors emerge. Each group reported the use of several strategies on a "usual" basis; these are listed below, with the mean reported use shown in parentheses.

0-34	35-49	50 and above
Contextualization (3.1)	Inferencing (3.4)	Notetaking (3.2)
Imagery (3.0)	Functional Planning (3.1)	Elaboration (3.2)
	Transfer (3.1)	Contextualization (3.1)
	Contextualization (3.1)	Selective Attention (3.1)
		Self-monitoring (3.1)
		Auditory Representation (3.1)

Table 8

Mean Reported Metacognitive Strategy Use on the Learning Strategies Inventory
by Use in Training, Initial ECLT Score, and Ethnicity

Measure/ Student Characteristic	Level	n	Total Metacognitive	Used in Training			Not Used in Training	
				Self-Evaluation	Selective Attention	Functional Planning	Self-Monitoring	Self-Management
ECLT Score[a]	0-34	5	2.7	2.1	2.9	2.9	2.7	2.6
	35-49	6	2.9	2.8	2.9	3.1	2.8	2.9
	50+	9	2.9	2.7	3.1	2.9	3.2	2.8
Ethnicity	Hispanic	16	2.8	2.6	2.9	3.0	2 9	2.7
	Non-Hispanic	5	2.9	2.7	3.2	2.8	2.9	3.1
Total		21	2.8	2.6	3.0	2.9	2.9	2.8

a. The ECLT score of one soldier was not known.

KEY TO LSI SCORES

1 - Never uses strategy
2 - Sometimes uses strategy
3 - Usually uses strategy
4 - Always uses strategy

Table 9

Mean Reported Cognitive Strategy Use on the Learning Strategy Inventory
by Use in Training, Initial ECLT Score, and Ethnicity

Measure/ Student Characteristic	Level	n	Total Cognitive	Used in Training		Not Used in Training						
				Inferencing	Cooperation[b]	Grouping	Imagery	Auditory Rep.	Note-taking	Transfer	Elaboration	Contextualization
ECLT Score[a]	0-34	5	2.9	2.9	2.9	2.9	3.0	2.7	2.9	2.8	2.9	3.1
	35-49	6	2.9	3.4	2.8	2.4	2.8	2.9	2.7	3.1	2.9	3.1
	50+	9	2.9	2.9	2.4	2.7	2.7	3.0	3.2	2.6	3.2	3.1
Ethnicity	Hispanic	16	2.9	3.2	2.8	2.4	2.8	3.0	3.0	2.9	3.1	3.0
	Non-Hispanic	5	2.8	2.5	2.3	2.9	2.7	2.7	3.1	2.6	2.9	3.3
Total		21	2.9	3.0	2.7	2.6	2.8	2.9	3.0	2.8	3.0	3.1

a. The ECLT Score of one soldier was not known.
b. Cooperation, a Social Mediating Strategy, was grouped with cognitive strategies for convenience.

KEY TO LSI SCORES

1 - Never uses strategy
2 - Sometimes uses strategy
3 - Usually uses strategy
4 - Always uses strategy

What is immediately apparent is that as the proficiency level increases, so does the number of different strategies reported. This is consistent with the findings presented in the Phase One study of learning strategies conducted with other soldiers in the DLI/ESL program (O'Malley et al., in press-c). Also consistent is the greater use of metacognitive strategies at the higher proficiency levels and the use of auditory representation. It is interesting to note that students in the mid-range of English proficiency report the highest use of functional planning, and also were the proficiency group to show the most improvement in the simulation task, which was based on the use of functional planning.

Several of the LSI strategy means evoke attention simply because of the low reported use. For example, the ECLT 0-34 group reported a very low *incidence of using* self-evaluation (2.1). Although analyses in the Phase One study were based on only two proficiency divisions (ECLT scores below 50, and ECLT scores equal to or more than 50), this finding is consistent with the earlier study, which also found a low incidence of self-evaluation at the lower proficiency level.

The low reported use of cooperation (2.4) in the ECLT 50+ group is not consistent with prior findings in the Phase One study. But this may help to explain why the cooperative activities in the training study were not successful. Typically, students at the higher proficiency levels are used by teachers to encourage and direct lower proficiency students, and group interactions are planned around mixing proficiency levels as a way of promoting learning at the lower levels. While groups were not assigned in

the TEC tape cooperations, the higher proficiency students apparently did not favor the use of cooperation and could not (or did not) provide the valuable direction needed for the success of this activity at all proficiency levels.

When the LSI is examined for differences in reported strategy use by ethnicity, some interesting differences are apparent. For one, the non-Hispanics report a slightly higher use of metacognitive strategies overall, and specifically, a greater use of selective attention and self-management. These findings are consistent with prior findings, as is the greater use of functional planning by the Hispanic soldiers. There is some consistency between Phase One and Phase Two reported use of cognitive strategies as well: For example, in both studies the Asians reported a much higher use of grouping and contextualization than do their Hispanic counterparts. A possible explanation for this is that Asian students might find vocabulary learning and use more difficult than do Hispanics because the former group's native languages are quite dissimilar from English. Perhaps strategies such as grouping and contextualization, typically used with vocabulary learning, are needed to help Asians organize new language elements.

Hispanic soldiers reported greater use of the following cognitive strategies: auditory representation, inferencing, transfer and cooperation. Logically, the greater use of auditory representation and transfer by Hispanics is not surprising, in that the similarities between English and Spanish give the Hispanic group a way of creating links between the two languages that the Asians do not have. Perhaps the very

similarities between the languages permit the Hispanics to practice more inferencing as well. However, their greater reported use of cooperation, which is consistent with findings from the prior study, may stem from cultural differences between the two ethnic groups and help to explain their superior performance on the TEC tape tests (cooperation was one of the strategies used in TEC tape activities, as was inferencing).

In conclusion, there are a number of differences between the ethnic groups in their reported use of strategies. While Asians report a higher use of metacognitive strategies, Hispanics report a greater use of many cognitive strategies. Many of the differences between the groups are consistent with differences found between the same ethnic groups reporting in the prior study (O'Malley et al., in press-c). Some of these differences shed light, not only on possible ethnic and cultural differences in learning styles, but also upon the performance of each ethnic group in the training study reported here.

Reported Strategy Use and Performance During Training. Looking at the reported use of the strategies found in the training program, no specific pattern emerges. The strategies used in training were not reported more often than strategies that were not used in the training. The metacognitive strategies included in the training were self-evaluation, selective attention, and functional planning. The cognitive strategies included in the training were inferencing and cooperation. Relating reported strategy use to performance on training tasks, one sees that relatively high reported use of a strategy does not necessarily correspond to high performance on tasks. The low proficiency group, for example, reported high use of cooperation; yet all of the tasks involving cooperation, these students improved substantially only in the listening and speaking activities during the DPR exercise. Mid-level students, on

the other hand, reported high use of self-evaluation, functional planning, inferencing, and cooperation. However, their performance was significantly different only on the speaking task which involved functional planning. The high proficiency group reported high use of self-evaluation and selective attention. Of the two tasks involving self-evaluation and selective attention, the students performed better only on the speaking portion of the DPR exercise.

However, before reaching any conclusions regarding reported strategy use and performance on training tasks, several questions come to mind. One question involves the interpretation of the LSI itself. Since students were not asked to relate their reported use of strategies on the LSI to the use of strategies during training, it is not appropriate to interpret reported strategy use on the LSI as evidence that students actually used the strategies presented during training with greater frequency as a result of the instruction. This gives rise to another question: What evidence exists that the students' strategy use was actually altered as a result of training? Except for the speaking exercises, it is difficult to ascertain the use of strategies during training. The students did show evidence of using the strategies when they spoke, e.g., they used the markers and special expressions that had been specifically taught to them for the DPR exercise and the speaking exercise. For listening, however, there is no proof that students selectively listened for those expressions that were expressly taught. It is, therefore, difficult to relate reported strategy use, strategy use during training, and performance on tasks at this time. Several approaches that may be fruitful in answering questions on strategy use and task performance are to incorporate checks for strategy use during training and to interview students at the end of training to verify strategy use.

Generalizability of Results to Other Army ESL Populations. Using the data collected on the Phase One soldiers enrolled at an earlier time in the same BSEP I-ESL program (O'Malley et al., in press-c), it is possible to examine the degree to which the students involved in the pilot study described in this report represent a "typical" Army ESL population. In the preceding paragraphs, comparisons were made between each group's self-reported use of learning strategies. In a further examination of the similarities and differences between two separate ESL classes, Table 10 presents data on students from each phase, including information regarding their ethnicity, enlistment status, academic achievement, ECLT scores, and overall LSI scores.

As Table 10 shows, common threads run through both subject pools: the ethnicity of students in these two Army ESL programs, for example, tended to be predominately Hispanic, with a small number of Asians from Korea and the Philippines. The majority of soldiers in both phases reported being high school graduates, although the percentage was higher among Phase Two students. For both groups, the majority of soldiers had more than 6 years of formal English study, with the preponderance falling between 11 and 15 years. Most soldiers in each group had studied English in their home country, and very few in either group had not studied English at all. A comparison of pre-ECLT scores for the two groups indicates a small difference in favor of the Phase One students, but scores seem to fall solidly into the mid to upper forties. More soldiers in Phase One claimed most recent residence in the U.S. than those in Phase Two, which may explain the former group's higher entry-ECLT scores. Exit-ECLT scores show the difference between the two groups now in favor of the pilot study students, with the scores falling into a narrow mid to upper fifties range.

Table 10

Comparison of Selected Background and Language Factors
of Phase One and Phase Two Students

Variable	Response Category	Phase One Students (n=37)		Phase Two Students (n=21)	
		n	%	n	%
Ethnicity	Hispanic	32	86.5	16	76.2
	Non-Hispanic	5	13.5	5	23.8
Enlistment Status	Regular Army	27	73.0	19	90.5
	National Guard	9	24.3	2	9.5
	Unknown	1	2.7	0	-
Most Recent Residence	Puerto Rico	17	46.0	13	61.9
	U.S.	16	43.2	8	38.1
	Other	1	2.7	0	-
	Unknown	3	8.1	0	-
Educational Achievement	Less than high school	6	16.2	1	4.8
	High school graduate	21	56.8	10	47.6
	More than high school	8	21.6	8	38.1
	Unknown	2	5.4	2	9.5
Prior Experience with English	Studied English in:				
	Home country	23	62.2	14	66.7
	U.S.	4	10.8	2	9.5
	Home country & U.S.	5	13.5	3	14.3
	Did not study English	3	8.1	2	9.5
	Unknown	2	5.4	0	-

Table 10

Comparison of Selected Background and Language Factors of Phase One and Phase Two Students

Variable	Response Category	Phase One Students (n=37) n	%	Phase Two Students (n=21) n	%
Years of English Study	None	3	8.1	2	9.5
	Less than 1 year	1	2.7	0	-
	1-5 years	5	13.5	2	9.5
	6-10 years	4	10.5	4	19.1
	11-15 years	16	43.2	9	42.9
	16 or more years	2	5.4	2	9.5
	Unknown	6	16.1	2	9.5
English Language Skills: Entry ECLT	Score Range:				
	0-29	1	2.7	3	14.3
	30-49	17	46.0	8	38.1
	50-69	19	51.4	9	42.9
	Unknown	0	-	1	4.8
	Mean	48.5		45.6	
	Standard Deviation	12.1		12.8	
English Language Skills: Exit ECLT	Score Range:				
	0-29	1	2.7	1	4.8
	30-49	9	24.3	3	14.3
	50-69	17	46.0	14	66.7
	70 and above	9	24.3	3	14.3
	No exit score	1	2.7	0	-
	Mean	55.4		58.3	
	Standard Deviation	15.0		12.2	

Overall, it would seem that students who participated in the learning strategies training did not differ in any major way from the students involved in Phase One data collection. There seems to be no reason to assume that the students in the pilot study were atypical of students enrolled in other Army ESL programs. However, before such training can be applied to other Army ESL programs, full experimentation with different strategies and sets of strategies is necessary. After more is known about the effects of certain strategies, teachers can also be trained to teach strategy use. Furthermore, other parts of the DLI curriculum must be tested for compatibility with the learning strategies approach before such a program can be implemented in Army ESL programs.

Analysis of Implementation

Overall, the learning strategies training program with the DLI/ESL materials ran fairly smoothly. The pace, activity, and intensity of the program contributed to student motivation and encouraged use of strategies. The way in which material to be learned was repeatedly paired with the use of learning strategies proved effective for students who had difficulty in understanding the initial strategy training. That is, students who did not understand the explanation of the use of strategies were better able to comprehend how to use a strategy once examples were given or once the activity was underway.

As mentioned earlier, the most successful activities were those that involved speaking and actual hands-on learning. Student motivation was high for these tasks because the hands-on experience and the speaking

practice were directly relevant to the soldiers' needs as new recruits. In particular, the speaking activities addressed the frustration that many students expressed about having insufficient opportunities to use the English language outside the classroom and their sense of their own speaking inadequacies. The reaction of the soldiers to both the speaking and hands-on activities provides a powerful indication of both what they feel their language needs are and what is particularly motivating to them as students.

Difficulties. The difficulties encountered during this treatment stemmed mainly from time constraints. For example, some lessons were more difficult than others and took more time to teach. As a consequence, only five of the six scheduled lessons were covered in thirty hours. TEC tapes were of varying lengths and complexity. Mechanical failures invalidated the use of two of the TEC tape tests. Individual testing took longer than anticipated and simulations were difficult to schedule as extra staff were involved.

Another problem was the failure of students with low proficiency to be successful even though they were observed trying to use strategies. For example, students with very low proficiency were unable to use inferencing successfully because the use of this strategy presupposes some proficiency. These students tended to rely on peers' translation of everything. They made few attempts to use contextual clues or even transfer from Spanish to English. For those students at the upper end of the low level, however, the same strategies were beneficial and enabled them to approach tasks with more confidence. The students at the mid and high levels appeared to benefit most from the use of strategies. Most were aware of their own

strategies and recognized the strategies that were being trained. These students were more able to verbalize about strategies at the end of the experiment.

Certain components of the training clearly need revision in order to maximize their effectiveness. In particular, activities related to viewing the TEC tapes were not successful as originally planned. Student practice of cooperation and self-evaluation to determine the completeness of their understanding of TEC tape material was not implemented in an effective manner that would promote independent student use of these strategies. Students needed a great deal of teacher direction before they would use this approach to learning and even then did not use the strategies in a well-directed, organized fashion.

In order for this approach to be successful and transferable to self-directed learning situations, more initial teacher direction is indicated. Specifically, requiring students to write their self-evaluations (in training responses were verbal and were directed at their peers and at themselves) or answer questions that were more specific to the TEC tape under viewing might provide the motivation necessary for students to practice the self-evaluation strategy in a complete manner. Further, cooperative activities should initially be more structured, given the apparent need of students for strict teacher direction. Perhaps assigning students into mixed proficiency groups and requiring each group to cooperate in a step-by-step fashion would provide the initial practice necessary to act as a model for this activity. In any event, the soldiers required a more thorough and systematic initiation into use of these strategies in order to become proficient in their application. Building

this foundation is necessary if soldiers are to eventually incorporate strategy use into their own learning approaches and become independent, resourceful learners.

Discussion

The results of the pilot test indicate that the relationship among strategies selected for each task, the task itself, language proficiency, and ethnicity of students is not a clear one. Few patterns were found relating task, task performance, proficiency level, and strategy set. However, before any conclusions can be reached regarding the use of strategies for certain tasks, various questions must be addressed.

One question is that it is difficult to isolate the effects of a given strategy on task performance when it is used in combination with other strategies. On the other hand, it is difficult to design a training program around single strategies when students report using multiple strategies to accomplish speaking and listening tasks as found in Phase One of this study. This may explain the relative success of the use of functional planning which is a multiple strategy. Another facet of this question is that students may use different strategies to different degrees according to proficiency level, individual needs, and learning styles. Part of the problem is discovering when it is that students are actually using strategies and to what degree during training. The ethnic differences found in this study provide a clue that there may be preferences for certain strategies and tasks based on ethnic background. The investigation of these differences is merely the beginning in this quest for answers.

The second question is that the difficulty of the task may affect relative success and may override the benefits gained by the use of strategies. For example, despite the use of strategies, no improvement in performance on TEC tape tests was seen because the tests were too difficult. Moreover, little proof that students were actually using the training strategies during this task exists. While performance on the speaking task improved as a whole, it was not significant for students of low proficiency because students did not understand the instructions well enough to get maximum benefits from using the strategies. It is apparent that to assess the effect of the use of strategies on listening and speaking tasks (1) task difficulty and training instructions will have to be fine tuned to the students' abilities and (2) ways of providing evidence that students are using specific strategies during training will have to be formulated.

A further question arising from learner differences is that of strategy use at different proficiency levels. While the range of different strategies increases with proficiency, can we safely say that students seek new strategies only after they reach a certain level of proficiency or is their range of strategy use limited at the beginning stages of language learning by the program of study? In other words, is the pattern of strategy use an artifact of the students' proficiency or an artifact of the students' language program? If strategy training were introduced early in a program a different pattern may emerge.

One question prompted by ethnic differences is that of resistance to learning and using new strategies even though they may be more effective than using one's old strategies. In the estimation of the project

instructors, non-Hispanic students felt more comfortable using strategies involving written material and resisted strategies geared to listening and speaking tasks. How much training and what kind of training is needed to introduce new strategies to students who already use certain strategies is an open question.

A final question that arises from this study is the transferability of strategies to different tasks. While many of the same strategies were used for the two listening tasks (DLI/ESL lessons and TEC tapes) students used them with varying degrees of success depending on the task. Obviously, more investigation of strategy transfer is needed before we can safely say that students will use these learning strategies throughout their military careers whenever they have new English language learning tasks.

Overall, the learning strategies approach blended well with high level goals in the DLI/ESL program. With some changes in focus and in curriculum details, this approach could be easily integrated into remaining portions of the current program. However, more investigation with different combinations of strategies and their effects on student performance at different levels of proficiency and with different tasks is needed.

Recommendations

Based on the results and experiences encountered during the pilot study we recommend the following:

1. That a study testing the effect of different sets of strategies on tasks of carefully controlled difficulty be conducted.

2. That a well defined method of verifying the use of specific strategies during language learning tasks be created.

3. That student characteristics such as ethnic background, learning style, and motivation be included in future studies on learning strategies.

4. That extension of the learning strategies approach in the DLI/ESL program be preceded by three areas of research: (a) analyses of other DLI/ESL components that will serve satisfactorily with learning strategy components, much like the study reported here; (b) pilot studies of these other DLI/ESL components, much like the study reported here; and (c) studies evaluating the effectiveness of training DLI/ESL teachers to use learning strategies tested previously in the pilot studies.

5. That sufficient time and resources be allotted to train and practice strategies in future DLI/ESL learning strategy programs.

Future Studies. Future studies should carefully control for task difficulty by pre-evaluating students for familiarity of procedures such as testing and use of certain media such as the written word and verbal instructions or by pre-training students on procedures used in training. In this way, tasks such as listening to instructions in the classroom would be as familiar as reading instructions and would not obscure the effects of strategy use.

Verifying strategy use is also an important factor to include in future studies. Proof of strategy use is more evident in speaking than in listening activities. Written or verbal questionnaires in the students' native language could be distributed after each listening activity or at the end of each day so that students could write or recount in detail exactly how they accomplished each task. A detailed evaluation could also be done at the end of the program to gather students' opinions on the suitability and effectiveness of individual strategies and strategy sets.

Student characteristics should be carefully controlled and accounted for so that more information on factors involving the use of some strategies over others is gathered. For example, students' notions of language and language systems may influence their preference for and hence the success of a given strategy. Combining measures of metalinguistic awareness with strategy use may give insights to why certain strategies are chosen over others.

Extension of the Learning Strategies Approach. Students and teachers indicated that learning strategies training could be combined with the current DLI/ESL curriculum. This suggests that additional strategy training could be successfully incorporated into the Army's BSEP/ESL program. However, prior to the introduction of strategy instruction, additional research would be required. These investigations should be accomplished in three stages. First, a continuation of the analysis of the DLI curriculum is necessary to identify the lesson components that would provide a satisfactory framework for the application of learning strategy instruction. This research stage would serve to identify the particular strategies that are most promising for particular English language tasks addressed in the DLI/ESL curriculum. Second, experimental pilot studies of strategy training linked to specific components of the DLI text are needed to assure a match between selected strategy instructions and the DLI lesson components. Such research would help to determine which strategies work best for which students and for which content specifications. Finally, once the effectiveness of the training is ascertained, related studies need to be conducted to identify if DLI teachers can be trained to provide the instruction effectively in a natural rather than in an experimental setting.

Training and Practicing Applications of the Strategies. For the purposes of clarity and time, it was necessary to revise the pilot test materials in order to reduce the number of DPR practice activities. For example, the DLI/ESL lessons, as originally planned, contained as many as six separate sets of DPR instructions for the students to practice. By the final day of training, only three sets of instructions were presented for listening and practicing the DPR strategy. Similarly, for the speaking component, only one or two sets of instructions were eventually practiced in groups, whereas five or six had originally been planned. This system evolved, not only due to time constraints, but because students were confusing steps from one set of instructions with those from another. By reducing the number of choices, students were able to concentrate on orally producing one or two sets of instructions which included all important concepts and vocabulary. This reduced confusion and made procedures clearer and easier to follow. As indicated before, the listening task could have been more difficult to show gains made through the application of learning strategies to listening. While much time was spent initially in training strategies, the subsequent activities were shortened so that the time utilized in strategy training was offset by short and smoothly running activities. The important point here is that sufficient time must be given initially to allow students to grasp, experiment with, and accept the concept of learning strategies. This is particularly true for the application of learning strategies to listening. With successive applications of strategies to various activities, students merely need to be reminded to use certain strategies. No great amounts of time are needed after the initial training to have students repeatedly apply the strategies to the same material, as was found.

REFERENCES

Atkinson, R.C., & Raugh, M.R. (1975). An application of the mnemonic keyword method to the acquisition of Russian vocabulary. Journal of Experimental Psychology: Human Learning and Memory, 104, 126-133.

Bloom, B.J. (Ed.). (1956). Taxanomy of educational objectives. Handbook I: Cognitive domain. New York: David McKay.

Brown, A.L., Bransford, J.D., Ferrara, R.A., & Campione, J.C. (1983). Learning, remembering, and understanding. In J.H. Flavell & E.M. Markham (Eds.), Carmichael's manual of child psychology, Vol. I. New York: Wiley.

Brown, A.L., & Palincsar, A.S. (1982). Inducing strategic learning from texts by means of informed, self-control training. Topics in learning and learning disabilities, 2(1), 1-17.

Cohen, A.D., & Aphek, E. (1980). Retention of second language vocabulary over time: Investigating the role of mnemonic associations. System, 8, 221-235.

Cohen, A.D., & Aphek, E. (1981). Easifying second language learning. Studies in Second Language Acquisition, 3(2), 221-236.

Dansereau, D.F. (1984). Development and evaluation of computer-based learning strategy training modules. Paper presented at the annual meetings of the American Educational Research Association, New Orleans.

Dansereau, D.F. (in press). Learning strategy research. In J. Segal, S. Chipman, & R. Glaser (Eds.), Thinking and learning skills: Relating learning to basic research. Vol. 1. Hillsdale, N.J.: Erlbaum.

Defense Language Institute English Language Center. (1983). ESL Course Management Plan, Lackland Air Force Base, Texas.

Holland, V.W., Rosenbaum, H., Stoddart, S., & Redish, J. (1982). BSEP I-ESL programs. Volume One: Findings. Washington, D.C.: The American Institutes for Research.

Levin, J.R. (in press). Educational applications of mnemonic pictures. In A.A. Sheikt (Ed.), Imagery and the educational process. Farmingdale, N.Y.: Baywood.

Naiman, N., Frohlich, M., Stern, H.H., & Todesco, A. (1978). The good language learner. Toronto: Modern Language Center, Ontario Institute for Studies in English.

O'Malley, J.M., Russo, R.P., Chamot, A.U., Stewner-Manzanares, G., & Kupper, L. (in press-a). Learning strategies used by high school students learning English as a second language. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

O'Malley, J.M., Russo, R.P., Chamot, A.U., Stewner-Manzanares, G., & Kupper, L. (in press-b). The effects of learning strategies training on the development of skills in English as a second language. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

O'Malley, J.M., Kupper, L., Chamot, A.U., Stewner-Manzanares, G., & Russo, R.P. (in press-c). A descriptive study of learning strategy applications by English as a second language students and teachers in the Army. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Oxford-Carpenter, R., Harman, J., & Redish, J. (1983). English-as-a-second-language programs in the Army. Alexandria, Virginia: U.S. Army Research Institute for the Behavioral and Social Sciences.

Pressley, M., Levin, J.R., Nakamura, G.V., Hope, D.J., Bisbo, J.G., & Toye, A.R. (1980). The keyword method of foreign vocabulary learning: An investigation of its generalizability. Journal of Applied Psychology, 65, 635-642.

Rigney, J.W. (1978). Learning strategies: A theoretical perspective. In H.F. O'Neil (Ed.), Learning strategies. New York: Academic Press.

Rubin, J. (1975). What the "good language learner" can teach us. TESOL Quarterly, 9(1), 41-51.

Salas, E., Kincaid, J.P., & Ashcroft, N. (1980). An assessment of Hispanic recruits who speak English as a second language. Orlando, FL: Training Analysis and Evaluation Group.

Seigel, J., Chipman, S., & Glaser, R. (Eds.). (in press). Thinking and learning skills: Relating learning to basic research. Vol. 1. Hillsdale, N.J.: Erlbaum.

Weinstein, C.E., & Underwood, V.L. (in press). Learning strategies: The how of learning. In J. Segal, S. Chipman, & R. Glaser (Eds.), Thinking and learning skills: Relating learning to basic research. Vol. 1. Hillsdale, N.J.: Erlbaum.

Wittrock, M.C., & Kelly, L.R. (1984). Teaching reading comprehension to adults in basic skills courses. Paper presented at the annual meetings of the American Educational Research Association, New Orleans.

Wittrock, M.C., Marks, C.B., & Doctorow, M.J. (1975). Reading as a generative process. Journal of Educational Psychology, 67, 484-489.

APPENDIX A

Text and Questions for Global Self-Evaluation

GLOBAL SELF EVALUATION

The purpose of this booklet is to help you become aware of how you learn English. You are now studying English six hours a day for the next 3-6 weeks. Soon you will begin Basic Training, and afterwards you will receive training in your area of specialization. All of this training will be conducted in English. Thus, it is very important that you learn to speak and understand this language.

There are ways in which you can help yourself to learn English. One of these ways is called <u>self-evaluation</u>. When you evaluate yourself, you look at how much you know already, and how much you <u>don't</u> know. You ask yourself questions about your learning (and you answer them honestly!). For example, you might ask yourself: What do I do that helps me learn? As a student, what are my strengths? What do I do right? How can I improve?

<u>Use this booklet to evaluate yourself as a language learner.</u> Begin by answering the questions on the following pages. Stop when you get to the yellow page.

These questions will give you a picture of yourself as a student of English. <u>Think</u>. <u>Reflect</u>. Answer honestly.

1. What do I do that helps me learn English? These are my <u>strengths</u> (strong points) as a student of English.
2. What do I do that slows down my learning of English? These are the areas in which I could improve myself as a student.
3. What is <u>difficult</u> for me to learn about the English language?
4. Complete this sentence: To progress more quickly in learning English, I need to _____.

APPENDIX B

Teacher's Script of a Sample DPR Lesson

DPR LESSON 1

LIFESAVING MEASURES

INTRODUCTION II-1-1

Our first lesson is about helping someone who has a wound. When a soldier has been hit by a bullet or by a grenade, he may have an open wound that is bleeding. We can help that person by covering the wound with a bandage and by stopping the bleeding. If we do not cover the wound, the bleeding may not stop and the person may die. We must take lifesaving measures. That is, we must try to save the person's life. We can do this by administering first aid.

One of the most important measures that we can take is to stop bleeding. There are two important ideas to remember when stopping bleeding.

1) You must cover the wound with a clean bandage to prevent or stop germs from entering, and

2) You must stop the bleeding by applying pressure to the wound.

Now, we will do some exercises to help you remember how to stop bleeding. Remember the five ways to understand and remember instructions. Use those techniques during these exercises.

(T points out techniques on board or elicits strategies from students.)

(Teacher reads the following aloud, performing the actions appropriate to each step and indicating the meaning of new vocabulary by pointing to the object or by emphasizing the action to be learned.)

Lifesaving measures II

You see a soldier who has been injured. He has a wound on the arm and he is unconscious or not awake.

Do the following:

1. First, check for responsiveness.
2. Second, expose the wound. Cut, tear, or lift away the clothing. (Do not attempt to clean the wound.)
3. Third, apply a dressing to the wound. Tie the bandage tightly. Make the knot over the wound.
4. Fourth, apply pressure to the bandage with your hand and raise the arm.
5. Last, check for other wounds and treat them if possible.

Lifesaving measures III

You see a soldier who is conscious and has a wound on his leg. Do the following:

1. First, check for bleeding.
2. Second, expose the wound.
3. Third, apply a pad or padding on the wound.
4. Fourth, knot the bandage over the wound.
5. Fifth, apply pressure to the pad by pressing firmly with your hand.

APPENDIX C

Sample Student Briefing Paper for Simulation Activity

SPEAKING II

GETTING CLARIFICATION

BRIEFING PAPER

You are a student taking a class in mouth-to-mouth resuscitation. There are some things that you do not understand and you would like to ask someone to help you. You also have some doubts about remaining calm in an emergency. You see a soldier in the barracks that you know has had some training in First Aid.

YOUR TASK IS TO:

1. Get help on things you do not understand about mouth-to-mouth resuscitation
2. Express your doubts about your ability to maintain a calm attitude in an emergency.

SPEAKING II

Teacher's Role

Simulation

You are an English speaking soldier sitting in the barracks when a non-English speaking soldier approaches you. He wants to get clarification on some points in First Aid. You have some experience in administering first aid and are known to be quite calm in emergencies. Since the soldier will ask about mouth-to-mouth resuscitation, you should know some points on mouth-to-mouth resuscitation, such as:

- o The first thing to do is to determine if the person has stopped breathing
- o The proper head tilt positon
- o One should give 12 breaths a minute
- o One should look, listen and feel for breath periodically
- o One needs practice to become proficient in administering mouth-to-mouth resuscitation

You must reassure the soldier that his training will serve him well in emergencies.

APPENDIX D

Sample Scripts for Two Conversations Used in Simulation Activity

11-1-3 Conversation A - Getting Help from a Buddy

SAMPLE A - Conversation - Getting Help from a Buddy

A: Hey Joe, can I talk to you for a minute?

B: Sure Miguel. What's up?

A: I have a couple of questions I'd like to ask you about a lesson I had today.

B: Sure. What was it on?

A: Mouth to Mouth Re--

B: Resuscitation. Sure. I know something about it. What's the problem?

A: I didn't understand the part about the head. You learned about this?

B: Oh I had some first aid in my course. We learned how to revive someone.

A: Revive? Is that the same thing as giving mouth-to-mouth...

B: Resuscitation. Yeah, you know, getting them to breath again. What was it that you didn't understand?

A: Well, you know when you tilt the person's head back? I couldn't get that right. My teacher told me I pushed the head too far back.

B: So don't push it so far!

A: But then the air wouldn't go in.

B: Oh. Did you put your hand under the neck? That helps.

A: Yeah, I tried that, but the head always went too far.

B: Did you put you other hand on the top of the head--here? for support?

A: I tried to do it--what's the word--position myself like the picture in our book. But when I put my other hand on the head I couldn't close the nose.

B: Well, you have to pinch the nose or all the air goes out.

A: I know. I watched when the other students did it and they didn't have problems. How do you do it?

B: Let's see. You put one hand under the neck and the other on the top of the head. Oh. I know what you're doing. You're only supposed to put your hand on the head when you <u>first</u> tilt the head back.

A: Why is that?

SPEAKING II

SAMPLE B -- Conversation - Getting Help From A Buddy

A: Say Sanders. Have you got a minute?

B: Yeah. What is it?

A: I don't understand some things in my first aid class and the sergeant told me to ask you.

B: O.K. What don't you understand?

A: Well, we're having lessons in bleeding.

B: Uh huh. You mean the lessons on stopping bleeding?

A: Yeah. Those lessons.

B: Uh huh.

A: The part I don't understand is when to use a tourniquet.

B: Oh. Just use one when you can't stop the bleeding. You know, after you've tried everything like bandages and wads and stuff. You gotta be real careful. Those things are serious stuff.

A: Oh yeah, yeah. I know that. But how do you do it?

B: Oh! Well, wrap some strong cloth like a bandana around and use a stick to twist the bandana. You make a kind of loop and put the stick through and twist.

A: Uh--you said a bandana?

B: Yeah. A piece of cloth. You know, like a handkerchief.

A: Oh yeah. And what do you do with the stick?

B: You twist it like this (gesture).

A: Where do you put the stick?

B: You make a loop and put the stick through it.

A: A loop. How do you--

B: It's like a circle. Here--let me show you-hey Joe--gotta a pencil on you? O.K. We'll use my handkerchief. Now, you wrap it around and put the stick through here. See?

APPENDIX E

Teacher's Script for Speaking Instruction

SPEAKING INSTRUCTION - FUNCTIONAL PLANNING

1. Briefing and task consideration.

Ss read briefing sheet and T explains any unknown items. T then asks Ss what it is that they will have to accomplish in this communication. Ss may think of individual lines or phrases, but T immediately transforms these into functions. For example: S: He has a wound on his arm. T: O.K. you have to give information. (Writes that on board). S: He is bleeding. T: O.K. you have describe a physical condition.

T continues to write functions on board as Ss think of either functions or lines. The idea is to get Ss thinking of language in functional terms.

2. Key lines.

T goes back to list of functions and asks Ss for lines that fill each function. The Ss are to pair functions with available language. T writes Ss lines on board and edits as she writes. No correction is offered unless a student specifically requests it. T elicits one or two lines for each function so that Ss get the idea that different words and structures can accomplish the same function.

3. Key line practice.

T has Ss read lines aloud (choral or individual) and coaches on fluency and pronunciation. T then simulates a possible conversation with each S individually. Ss learn the utility of the lines as T varies her lines but maintains the same functions for each student. The functions for the first briefing paper (can be the following):

- o signalling distress/requesting assistance
- o explaining the problem
- o paraphrasing/clarification
- o reporting events
- o describing a physical condition
- o expressing needs
- o requesting information
- o leavetaking

T then gives feedback to each S after each practice. Feedback should concentrate on comprehensibility and appropriateness.

4. Sample dialog.

Ss then listen to a sample that is a conversation utilizing the same or similar functions which illustrate how such a conversation might go. T tells Ss that the task is to listen for how the soldier "explains the problem," "describes the physical condition," etc. Ss are to listen for content as well--find out the condition of the wounded--soldier and what first aid measures have been administered.

Ss may listen to the tape once and discuss content and language with the T out of the room. T enters and answers questions on language and checks for general comprehension. If Ss do not understand the tape the

APPENDIX F

DPR Listening and Speaking Test

DPR LISTENING AND SPEAKING TEST

LISTENING

Comprehension of instructions	0	1	2	3	4

SPEAKING

Comprehensibility	0	1	2	3	4
Memory of sequence	0	1	2	3	4
Memory of content	0	1	2	3	4

0 = None
1 = Little
2 = Half
3 = Most
4 = All

APPENDIX G

Key to FSI Scale Conversion

and

FSI Proficiency Level Definitions

FSI SCALE CONVERSION KEY

FSI Rating	Conversion *
0	0
0+	1
1	2
1+	3
2	4
2+	5
3	6
3+	7
4	8
4+	9
5	10

* The 0-5 FSI scale was converted to a 0-10 scale to allow for coding and analysis of plus scores, such as 1+.

FSI CRITERIA FOR RATING LISTENING AND SPEAKING PROFICIENCY

CODE		
0	L-0 No practical proficiency	S-0 No practical proficiency
1	L-1 Elementary proficiency: Understands most simple questions and statements on familiar topics when spoken to very slowly and distinctly. These often have to be repeated in different terms before s/he understands.	L-1 Elementary proficiency: Asks and answers questions on daily personal needs within a limited vocabulary and with frequent errors in pronunciation and grammar.
2	L-2 Limited working proficiency: Understands most conversation when spoken to distinctly and at a slower than normal rate. Points have to be restated occasionally.	S-2 Limited working proficiency: Converses intelligibly but without thorough control of pronunciation and grammar within most normal situations, about current events, his/her work, family, autobiographical information, and non-technical subjects.
3	L-3 Minimum technical proficiency: Understands general conversation or discusses within his/her special field, when at normal conversational speed.	S-3 Minimum technical proficiency: Participates effectively in all general conversations, discusses particular interests and his/her special field, without making errors that obscure meaning.
4	L-4 Full technical proficiency: Understands any conversation within the range of his experience, when at normal conversational speed.	S-4 Full technical proficiency: Speaks the language fluently and accurately on all levels pertinent to military service needs, without errors of pronunciation or grammar that interfere with ease of understanding.
5	L-5 Native or bilingual proficiency: Comprehension proficiency equivalent to that of an educated native speaker.	S-5 Native or bilingual proficiency: Speaks with a proficiency equivalent to that of an educated native speaker.

FOREIGN SERVICE INSTITUTE
ABSOLUTE LANGUAGE PROFICIENCY RATINGS

As currently used, all the ratings described below (except the S-5) may be modified by a plus (+), indicating that proficiency substantially exceeds the minimum requirements for the level involved but falls short of those for the next higher level.

DEFINITIONS OF ABSOLUTE RATINGS

ELEMENTARY PROFICIENCY

S-1 Able to satisfy routine travel needs and minimum courtesy requirements. Can ask and answer questions on very familiar topics; within the scope of very limited language experience can understand simple questions and statements, allowing for slowed speech, repetition or paraphrase; speaking vocabulary inadequate to express anything but the most elementary needs; errors in pronunciation and grammar are frequent, but can be understood by a native speaker used to dealing with foreigners attempting to speak the language; while topics which are "very familiar" and elementary needs vary considerably from individual to individual, any person at the S-1 level should be able to order a simple meal, ask for shelter or lodging, ask and give simple directions, make purchases, and tell time.

LIMITED WORKING PROFICIENCY

S-2 Able to satisfy routine social demands and limited work requirements. Can handle with confidence but not with facility most social situations including introductions and casual conversations about current events, as well as work, family, and autobiographical information; can handle limited work requirements, needing help in handling any complications or difficulties; can get the gist of most conversations on non-technical subjects (i.e., topics which require no specialized knowledge) and has a speaking vocabulary sufficient to respond simply with some circumlocutions; accent, though often quite faulty, is intelligible; can usually handle elementary constructions quite accurately but does not have thorough or confident control of the grammar.

APPENDIX H

Sample TEC Tape Test

NAME: _____ DATE: _____

MOUTH TO MOUTH RESUSCITATION

You have heard that an important step in "procedures to open the airway" is to "look, listen and feel." Questions 1-3 relate to what you do when you look, listen and feel. Read the statement and circle the phrase that best completes the statement.

1. You look to see if...

   A. color returns to the casualty's face and nails.
   B. the casualty's teeth are clenched tightly.
   C. the casualty's chest rises and falls.
   D. the casualty has obvious neck or back injuries.

2. You listen to find out if ...

   A. air is coming out of or going into the casualty's mouth.
   B. the casualty has unclenched his teeth.
   C. the casualty's heart is beating.
   D. the casualty's tongue still blocks the airway.

3. You feel for...

   A. neck or spinal injuries.
   B. clenched teeth.
   C. warmth of his skin.
   D. his breath on your face.

4. Mouth to mouth resuscitation is performed because...

   A. the casualty may have a spinal injury.
   B. lack of oxygen may lead to death.
   C. the tongue may be blocking the airway.
   D. the casualty looks pale and nervous.

APPENDIX I

Learning Strategies Inventory

DATA REQUIRED BY THE PRIVACY ACT OF 1974
(5 U.S.C. 552a)

TITLE OF FORM	PRESCRIBING DIRECTIVE
LEARNING ENGLISH AS A SECOND LANGUAGE: Student Questionnaire	AR 70-1

1. AUTHORITY

10 USC Sec 4503

2. PRINCIPAL PURPOSE(S)

The data collected with the attached form are to be used for research purposes only.

3. ROUTINE USES

This is an experimental personnel data collection form developed by the U.S. Army Research Institute for the Behavioral and Social Sciences pursuant to its research mission as prescribed in AR 70-1. When identifiers (name or Social Security Number) are requested, they are to be used for research administration and statistical control purposes only. Full confidentiality of the responses will be maintained in the processing of these data.

4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION

Your participation in this research is strictly voluntary. Individuals are encouraged to provide complete and accurate information in the interests of the research but there will be no effect on individuals for not providing all or any part of the information. This notice may be detached from the rest of the form and retained by the individual if so desired.

FORM Privacy Act Statement · 26 Sep 75

LEARNING ENGLISH AS A SECOND LANGUAGE

Student Questionnaire

Instructions

We want to ask about some things that help you learn English as a second language. Students sometimes have special ways of studying, speaking to others, or listening that help them in learning how to speak and understand English. We want to know if you do some of these things when you try to learn English.

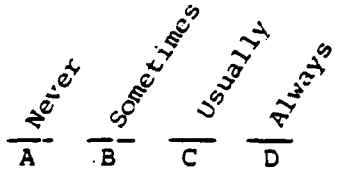
On the following pages you will find 42 statements about learning a second language. Please read each statement. Then circle one letter (A to D) that tells if the statement is true of you when you try to learn English.

A. Never true of you
B. Sometimes true of you
C. Usually true of you
D. Always true of you

There are no right or wrong answers. Try to rate yourself on what you actually do. Please work as quickly as you can without being careless, and complete all items.

Example

This example will show how to mark the questions on the following pages. Read the example and draw a circle around the letter that tells how you learn English.



I translate what I hear in English into my own language so I can be sure to understand it.

If you never do this, draw a circle around the letter A. If you only do this sometimes, draw a circle around the letter B. But if you do it usually, draw a circle around the letter C. Use the letter D if you always do it. Remember draw a circle around the letter that tells what you actually do to learn English.

Name: _____

Base: _____ Date: _____

Remember to draw a circle around the letter that tells what you actually do to learn English.

Never	Sometimes	Usually	Always		
A	B	C	D	1.	When I have a long vocabulary list, I break it up into parts. Then I try to learn one part before going to the next.
A	B	C	D	2.	I make a picture in my head of what a word represents so that I can remember its meaning.
A	B	C	D	3.	I remember new words because I can hear in my mind how they are pronounced.
A	B	C	D	4.	After I study, I know if I studied well because I look back to see if I met my goals for learning.
A	B	C	D	5.	When I don't know what a word means, I use the rest of the sentence to help me understand.
A	B	C	D	6.	When I listen to the teacher, I write down the main ideas and important points.
A	B	C	D	7.	I listen most for names and dates when the teacher talks about history.
A	B	C	D	8.	If I have to give a talk to the class, I give it to a friend first so he or she can tell me how it sounds.
A	B	C	D	9.	I say the same kind of things in English as I did in my own language when I meet a new person.
A	B	C	D	10.	I try to plan what kinds of things to say in a conversation.
A	B	C	D	11.	At parties and other social events, I talk to people who speak my own language.
A	B	C	D	12.	I don't correct myself when I make a mistake in talking because the other person will get the idea anyway.
A	B	C	D	13.	When I hear new information, I try to connect it to what I already know.
A	B	C	D	14.	When I want to learn new words in English, I make up a sentence for each one.
A	B	C	D	15.	I try to divide what I am studying into parts, and remember something important about each part.

Never	Sometimes	Usually	Always		
A	B	C	D	16.	I think about myself doing the action that a new word describes.
A	B	C	D	17.	Music helps me remember new words because I can say the words to the music.
A	B	C	D	18.	I remember things I say in English and look back at what my mistakes were.
A	B	C	D	19.	When people speak too fast for me, I look for single words that help me understand what they are saying.
A	B	C	D	20.	I do not take notes when the teacher gives directions.
A	B	C	D	21.	When I listen to the teacher, I listen carefully for words she repeats or stresses.
A	B	C	D	22.	I ask people who speak English well to help me practice.
A	B	C	D	23.	I make use of words or parts of words that are similar in English and in my own language in order to learn their meaning.
A	B	C	D	24.	After I think about what might happen in a conversation, I find out if I know the English for what I want to say.
A	B	C	D	25.	I go to movies or watch TV so I can learn English.
A	B	C	D	26.	I listen carefully to my own pronunciation and try to correct it as I am talking.
A	B	C	D	27.	I think about how to apply new things that I hear to my everyday life.
A	B	C	D	28.	When I hear a new sentence, I try to think of a conversation in which I can use it.
A	B	C	D	29.	When I have a long vocabulary list, I divide it up into parts, and give each part a name that has special meaning.
A	B	C	D	30.	I try to imagine new words in a special situation or setting.
A	B	C	D	31.	In order to remember how to say a word, I think of a word that sounds like it.
A	B	C	D	32.	I keep a diary or a journal in which I record my experiences learning English.
A	B	C	D	33.	When I don't understand a person, I think about where we are and what we are doing, and this helps me understand.
A	B	C	D	34.	I do not write down most new words because I won't hear them again anyway.

Never	Sometimes	Usually	Always		
A	B	C	D	35.	When I hear a story told in English, I listen for the beginning, middle and end.
A	B	C	D	36.	I ask my friends to comment on my English.
A	B	C	D	37.	What I already know in my own language helps me understand what the teacher is saying in English.
A	B	C	D	38.	If I have to give a talk to the class, I plan to say things in the right order and stress things that are important.
A	B	C	D	39.	I try to make friends with people who speak English to me.
A	B	C	D	40.	If I make a mistake in grammar, I stop and correct what I said.
A	B	C	D	41.	I try to connect what I am hearing in a lecture to my own experiences.
A	B	C	D	42.	I try to use words in a conversation as soon as I learn them.